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Journal of the Society of Arts.

FRIDAY, FEBRUARY 27, 1863.

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THE SOCIETY'S MEMORIAL OF THE PRINCE CONSORT.

The following circular, with an abstract of the proceedings of the General Meeting held on the 7th inst., has been issued to the members:—

Society of Arts, Adelphi, London, W.C., Feb., 1863.

Sir,—I am directed to bring to your notice the subjoined proceedings of a Special General Meeting of this Society, held on Saturday, the 7th instant.

Should you desire to have your name placed on the list of subscribers, I shall feel obliged by your filling in the accompanying paper, and returning it to me, with your subscription, which may be in the form of a post-office order or cheque, made payable to the Financial Officer, Mr. Samuel Thomas Davenport, and crossed Coutts and Co. I am, Sir, your obedient servant,

P. LE NEVE FOSTER, *Secretary*.

The subscription of each member is limited to one guinea.

The following is the list of subscribers up to the 26th inst. :—

Adams, Thomas	£1	1	0
Addington, Right Hon. Henry Unwin	1	1	0
Akroyd, Edward	1	1	0
Alger, John	1	1	0
Ames, John	1	1	0
Anderton, James	1	1	0
Andrew, W. P.	1	1	0
Atkinson, William	1	1	0
Austin, James	1	1	0
Bacon, Jacob Perkins	1	1	0
Balleras, Guillermo Esteban	1	1	0
Barber, Charles	1	1	0
Bartlett, William E.	1	1	0
Birkett, John	1	1	0
Blagden, George	1	1	0
Blaine, Delabere Roberton	1	1	0
Bodkin, William Henry	1	1	0
Boileau, Sir John P., Bart., F.R.S	1	1	0
Bowley, Robert K.	1	1	0
Boyd, James	1	1	0
Braby, Frederick	1	1	0
Brassey, Thomas	1	1	0
Brickwood, John Strettell	1	1	0
Brook, Charles	1	1	0
Brookes, William	1	1	0
Brooks, Henry	1	1	0
Browell, Edward M.	1	1	0
Brown, Sir William, Bart.	1	1	0
Browne, Edward	1	1	0
Budgett, John P.	1	1	0
Burgoyne, Gen. Sir John F., Bart., G.C.B., F.R.S.	1	1	0
Burton, William S.	1	1	0
Cama, M. H.	1	1	0
Caplin, Madame R. A.	1	1	0
Champion, Percival	1	1	0
Chance, Robert Lucas	1	1	0
Chater Joseph	1	1	0
Christie, Robert Monro	1	1	0
Clabon, John M.	1	1	0
Clutton, John	1	1	0
Cock, John, Junr.	£1	1	0
Coghlan, H. T.	1	1	0
Cole, Henry, C.B.	1	1	0
Corbett, John	1	1	0
Corderry, Edward	1	1	0
Courtauld, Samuel	1	1	0
Creed, Henry	1	1	0
Critchett, Charles (Assistant Secretary)	1	1	0
Curling, Joseph	1	1	0
Crawford, Robert Wygram, M.P.	1	1	0
Darby, Abraham	1	1	0
Davenport, Samuel Thomas (Financial Officer)	1	1	0
Dawbarn, Richard W.	1	1	0
Dawbarn, Robert	1	1	0
Day, William	1	1	0
Dilke, Sir C. Wentworth, Bart.	1	1	0
Dilke, Charles W.	1	1	0
Docker, F. W.	1	1	0
Dowleans, A. M.	1	1	0
Drax, J. S. W. S. Erle, M.P.	1	1	0
Dutton, William C.	1	1	0
Eamonson, Joshua J.	1	1	0
Eastham, John	1	1	0
Easton, James	1	1	0
Easton, Percy Shand	1	1	0
Ebury, Lord	1	1	0
Elliot, William Henry Fletcher	1	0	0
Ellis, William	1	1	0
Evans, E. Bickerton	1	1	0
Evans, Jeremiah	1	1	0
Ewart, William M.P.	1	1	0
Faraday, Michael, D.C.L., F.R.S.	1	1	0
Faulkner, John, Junr.	1	1	0
Field, John	1	1	0
Field, William	1	1	0
Fordham, Thomas	1	1	0
Foster, P. Le Neve (Secretary)	1	1	0
Fox, Sir Charles	1	1	0
Fowler, Robert N.	1	1	0
Freer, Rev. Richard Lane, D.D.	1	1	0
Garling, Henry	1	1	0
Geeves, William	1	1	0
Gilbart, James William, F.R.S.	1	1	0
Goding, Charles	1	1	0
Godwin, George, F.R.S.	1	1	0
Gooch, Joseph H.	1	1	0
Goode, Thomas	1	1	0
Gordon, Col. W. J., C.B., R.E., D.A.G.	1	1	0
Graham, Peter	1	1	0
Graham, Thomas, D.C.L., F.R.S.	1	1	0
Graham, William	1	1	0
Grant, Alexander	1	1	0
Grey, Major-General the Hon. Charles	1	1	0
Hack, Thomas	0	10	6
Haden, F. Seymour, F.R.C.S.	1	1	0
Hall, Walter	1	1	0
Hamilton, Edward	1	1	0
Hancock, James Lyne	1	1	0
Hancock, Frederick William	1	1	0
Hanhart, Michael	1	1	0
Hannay, John	0	10	6
Hannay, Robert	1	1	0
Hannay, Thomas	0	10	6
Hawes, William	1	1	0
Headland, Edward	1	1	0
Heane, Henry	1	1	0
Heymann, Lewis	1	1	0
Heywood, James	1	1	0
Hicks, Thomas	1	1	0
Hollins, Michael Daintree	1	1	0
Holmes, Alfred William	1	1	0

Holmes, Herbert Mountford	£1	1	0
Holmes, James	1	1	0
Horton, Isaac	1	1	0
James, Jabez	1	1	0
Joel, Joseph	1	1	0
Johnson, Henry	1	1	0
Johnson, Jabez	1	1	0
Jones, Owen	1	1	0
Jones, Richard Lambert	1	1	0
Kelk, John	1	1	0
Kemp, George T.	1	1	0
Lawrence, Frederick	1	1	0
Larnach, Donald	1	1	0
Leeks, Edward Frederick	1	1	0
Levi, Leone	1	1	0
Lucas, Thomas	1	1	0
Macarthur, Major-Gen. Edward, C.B.	1	1	0
MacDonald, J. C.	1	1	0
Macfarlane, Walter	1	1	0
Maclea, Charles G.	1	1	0
Malcolm, Major-Gen. G. A.	1	1	0
Manby, Charles, F.R.S.	1	1	0
Marsh, Matthew Henry, M.P.	1	1	0
Martin, Thomas	1	1	0
Martineau, David	1	1	0
May, Harry	1	1	0
McMurray, William	1	1	0
Mechi, Alderman	1	1	0
Merle, William Henry	1	1	0
Miles, Alfred W.	1	1	0
Mocatta, Benjamin	1	1	0
Moore, Charles	0	10	6
Morant, Robert	1	1	0
Moulton, Stephen	1	1	0
Muir, William	0	10	6
Mulready, William, R.A.	1	1	0
Munn, Major W. A.	1	1	0
Murchison, J. H.	1	1	0
Murchison, Sir Roderick Impey, D.C.L.	1	1	0
Napier, Robert	1	1	0
Navroji, Dádábhái	1	1	0
Newcombe, S. Prout	1	1	0
Oldershaw, Capt.	1	1	0
Pakington, Sir John S., Bart., M.P.	1	1	0
Palmer, George	1	1	0
Pearce, Alfred B.	1	1	0
Petrie, Samuel	1	1	0
Phillips, Sir Thomas, F.G.S.	1	1	0
Potter, Thomas	1	1	0
Preller, C. A.	1	1	0
Price, Arthur J.	1	1	0
Proctor, John	1	1	0
Provis, William Alexander	1	1	0
Radstock, Lord	1	1	0
Ratcliff, Charles	1	1	0
Rawson, W. H. Jun.	1	1	0
Redgrave, Samuel	1	1	0
Reeve, Charles	1	1	0
Reveley, Henry W	0	10	6
Reiss, James	1	1	0
Rixon, Alfred H.	1	1	0
Robb, Alexander	1	1	0
Russell, Capt. G.	0	10	0
Russell, John James	1	1	0
Russell, John Scott, F.R.S.	1	1	0
St. David's, Bishop of	1	1	0
Salomons, Aaron	1	1	0
Salomons, David	£1	1	0
Sargood, F. J.	1	1	0
Saul, G. T.	1	1	0
Schneider, Richard	1	1	0
Sedgwick, John Bell	1	1	0
Shearer, Bettesworth Pitt	1	1	0
Shove, W. Spencer	1	1	0
Simon, George	1	1	0
Smart, Sir George T.	1	1	0
Smith, George	1	1	0
Smith, J. Scott	1	1	0
Smith, R. M.	1	1	0
Smith, T. Mosdell	1	1	0
Sopwith, Thomas, F.R.S.	1	1	0
Stanton, George	1	1	0
Stephens, Charles	1	1	0
Stirling, Thomas	1	1	0
Straker, John	1	1	0
Symonds, Capt. R.N.	1	1	0
Sykes, Col. W. H., M.P., F.R.S.	1	1	0
Taylor, George	1	1	0
Taylor, John	1	1	0
Trevelyan, Arthur	1	1	0
Trevelyan, Sir Walter Calverley, Bart.	1	1	0
Tulloch, James	1	1	0
Twining, Thomas	1	1	0
Underdown, E. M.	1	1	0
Veitch, James	1	1	0
Vieweg, A. J.	1	1	0
Walker, Sir Edward S.	1	1	0
Webb, Charles Locock	1	1	0
Williams, Charles Wye	1	1	0
Williams, Walter	1	1	0
Williams, William	1	1	0
Wilson, G. Fergusson, F.R.S.	1	1	0
Wilson, W. Newton	1	1	0
Winkworth, Thomas	1	1	0
Woodd, Basil Thomas, M.P.	1	1	0
Wood, John	1	1	0
Woollams, Henry	1	1	0
Wright, Philip	1	1	0
Wyon, Leonard C.	1	1	0
Yeats, John, LL.D., F.R.G.S.	1	1	0

WOOD CARVING.

EXHIBITION AND OFFER OF PREMIUMS.

The Council have had under consideration a communication from the Society of Wood Carvers, asking the aid of the Society of Arts in promoting the art of wood carving in this country, and they have agreed to allow the use of the Society's rooms for the purpose of holding an exhibition of wood carving, both modern and ancient, in the month of June next. The Council have further agreed to offer the Society's Silver Medal and to make a grant of £30, the Society of Wood Carvers giving £15, as a fund for prizes to be awarded to the most meritorious exhibitors on that occasion, in the following divisions, thus:—

First Division.

Human figure in alto or bas relief. Animals or natural foliage may be used as accessories.

1st Prize of £8 and the Society's Silver Medal.
2nd Prize of £4.
3rd Prize of £3.

SECOND DIVISION.

Animal or still life. Fruit, flowers, or natural foliage may be used as accessories.

1st Prize of £8.
2nd Prize of £4.
3rd Prize of £3.

THIRD DIVISION.

Natural foliage, fruit, or flowers, or conventional ornament in which grotesque figures or animals may form accessories, preference being given where the work is of an applied character for ordinary decorative purposes, as representing commercial value.

1st Prize of £8.
2nd Prize of £4.
3rd Prize of £3.

Employers or private owners may be Exhibitors, but *bonâ fide* workmen only can receive Prizes.

The Judges will be selected as follows:—Four by the Council of the Society of Arts, and three by the Society of Wood Carvers.

TWELFTH ORDINARY MEETING.

WEDNESDAY, FEBRUARY 25, 1863.

The Twelfth Ordinary Meeting of the One Hundred and Ninth Session was held on Wednesday, the 25th inst., Thomas Bazley, Esq., M.P., Vice-President of the Society, in the chair.

The following candidates were proposed for election as members of the Society:—

Atkinson, Mrs. William.	47, Gordon-square, W.C.
Dundas, George Hamilton.	13, Pall-mall, S.W.
Fowke, Thomas............	11, Mornington-place, Hampstead-road, N.W.
Purdie, James..............	3, Walbrook-buildings, E.C.
Scott, Alexander Nairn...	5, Bury-st., St. James's, S.W.

The following Candidates were balloted for and duly elected members of the Society:—

Bright, Sir Charles	1, Victoria-street, Westminster, S.W.
Clark, Latimer	1, Victoria-street, Westminster, S.W.
Corss, James	63, Shoreditch High-street, N.E.
Deane, Edward	1, Arthur-street East, London-bridge, E.C.
Figg, John Wilmin	1, Denmark-street, Soho, W.C.
Pierce, Charles	Boandices, Balham.
Pim, Captain Bedford, R.N.	Junior United Service Club, S.W.
Seager, General Edward...	9, St. James's-street, S.W.
Shallis, John	11, St. Mark's-square, N.W.

AND AS HONORARY CORRESPONDING MEMBER.

Maurice, G.	Secretary of the Société d'Encouragement, 44, Rue Bonaparte, Paris.

The following Institution has been received into Union since the last announcement:—

St. Peter's Reading-room.

The Paper read was—

ON THE PRESENT POSITION AND FUTURE PROSPECTS OF THE SUPPLY OF COTTON.

BY JOHN CHEETHAM.

In the year 1858, my friend Mr. Ashworth read an able paper before the members of this Society, minutely tracing the rise and progress of the cotton manufacture, and describing the numerous changes, social and commercial, which it had effected in Lancashire and the adjoining counties. Referring to the supply of the raw material, he made the following observation:—"The entire failure of a cotton crop, should it ever occur, would utterly destroy, and perhaps for ever, all the manufacturing prosperity we possess. Or, should the growth in any one year be only one million, instead of three millions, of bales, the manufacturing and trading classes would find themselves involved in losses which, in many cases, would amount to irretrievable ruin—millions of our countrymen would become deprived of employment and food, and, as a consequence, the misfortune would involve this country in a series of calamities, political, social, and commercial, such as cannot be contemplated without anxiety and dismay." Little did my friend think that what he then shrunk from contemplating would, within the short period of four years, actually occur. It is true no entire failure of the crop has ensued, but the supply which, in 1860, was 3,360,000 bales imported into Great Britain, was, in 1862, only 1,400,000, and the consequent diminution in employment is represented by a reduction in the rate of consumption from 48,500 bales per week in the former year, to 22,800 in the latter, entailing a weekly loss in wages of £170,000, and leaving not less than half a million of operatives to be sustained by charitable relief, or from parochial funds. The patience and loyalty with which this class have borne their sufferings have excited the admiration of their countrymen at large, and will, I hope, tend to make more universally known the valuable qualities of a population which, at a distance, has not been regarded with that appreciation to which it is justly entitled. Even if we could believe that these evils were already past, or rapidly disappearing, they would furnish valid ground for thoroughly re-considering the question of cotton supply, with a view to prevent their recurrence. But the contrary is the case. As time progresses, the area of distress extends. The various trades connected with the cotton manufacture are now suffering. Fixed investments of capital, estimated to be sixty millions sterling, are no longer profitable. Mills and manufactures are worked at a loss, and when closed are deteriorating in value. In short, a continuance of the present state of things will slowly, but surely, entail ruin upon all concerned. Only one remedy can arrest this. We very gratefully and heartily acknowledge the unexampled liberality with which voluntary aid has been extended to the sufferers, but the very benevolence which prompted it would condemn a continued dependence on such help as undesirable even if it were practicable. Modifications of the Poor Law—grants of public money—can only be temporary expedients. Emigration, if adopted by a few only, would not relieve the great mass of the unemployed, and, if removing large numbers, would effectually postpone any great improvement in the state of trade, by still further increasing the scarcity of labour, which has always been one of its great hindrances. Only one remedy must be sought. The want of raw material has occasioned these evils. The supply of cotton must remove them. How is that supply to be obtained? In order to answer this question, it will be necessary for us to consider the cause of the present deficiency. It has arisen really from too great a reliance upon one source of supply, a dependence, the danger of which, though frequently pointed out, has excited comparatively little notice or alarm. How great was this dependence may be seen from the fact that in the year 1860, whilst the total consumption was 48,500 bales per week, 41,000, or 85 per cent., were American; 4,000, or 8 per cent., from Egypt and Brazil; and 3,500, or 7 per cent. from East and West Indies: thus leaving $\frac{5}{6}$ths of the supply to America, and only $\frac{1}{6}$th to all other cotton-producing countries.

The inquiry at once arises, What has occasioned this great preponderance in favour of the American planter? I purpose, first of all, to endeavour to answer that question, and then to notice successively the other cotton producing countries, comparing their facilities and disadvantages for the growth of this crop, with those of the great field of cotton cultivation.

The planter of the Southern States is an Anglo-Saxon, possessing the skill, enterprise, and energy peculiar to that race. He is situated in a favourable climate, has a rich and fertile soil, an abundance of land, not heavily taxed, and a supply of labour well organised, and under perfect control, whatever may be said as to its morality or real economy. As an intelligent and skilful husbandman, he pays the strictest attention to the sowing of the seed, treatment of the land, and the different stages in the cultivation of the crop, which this plant seems specially to require. His implements of husbandry are of the most improved construction. He is specially careful in the picking, gathering, and cleaning of his cotton, using machines for the last object of the most approved and economical description. His country is intersected by roads, railways, and rivers, which give cheap and expeditious access to the ports of shipment. He can avail himself, when requisite, of an advance of capital at a reasonable rate from his factor, to whom his cotton is consigned, and he has felt himself under a government which secured protection to life and property, and did not oppose obstacles to the success of the work in which he is engaged. By this favourable combination of circumstances, the Southern planter has been able to produce the most useful qualities of cotton known, from the fine Sea Island to the low ordinary Orleans, at a cost which has distanced all competitors, and enabled him to extend his annual production from 430,000 bales in 1820 to 4,675,000 bales in 1860, this latter representing in value the sum of forty millions sterling.

Such, then, is the extent of that exportation from the Southern states, which has been suddenly but effectually stopped by the civil war now raging upon the American Continent. Only 71,000 bales have, during the year 1862, reached us from this source, nor can we, should the war continue, expect a much larger annual supply. Indeed, we ought not to conceal from ourselves the unwelcome truth, that in this contingency, even with all the extraordinary impetus given to cotton cultivation by the high price offered, there cannot for years be any adequate supply of the required material. It has taken the Southern planter twenty years to double his crop, even with all the exceptional facilities at his command. A far larger increase, with far fewer advantages, would in this case be required from the other cotton-growing countries. If, however, peace should soon be restored, we may indeed expect a temporary relief, by the arrival of the accumulated crops of the last two years, amounting perhaps to four millions of bales. But so much land has been thrown out of cultivation, or sown with other crops, labour and capital will have become so disorganised by the war, be the terms of peace what they may, that he production of the American fields will for some time be limited. What effect this continued deficiency, and consequent high price of the raw material, will have upon the cotton manufacture, it is not difficult to foresee. On the one hand, experience teaches us that they will seriously limit the demand for the manufactured article, and so restrict the trade; but, on the other, they will so stimulate the cultivation of cotton wherever that crop can be grown, that before long we may expect that imports from other countries will fully supplement the American supply. But although we have to expect a diminished exportation from the Southern States, it will still be comparatively large. Possessing many of his former advantages, compelled to find employment for the population around him, whether slave or free, the Southern planter can adopt no more profitable employment than the cultivation of cotton, and accordingly we shall, under any circumstances, again derive a considerable proportion of our supply from the Southern States. There is, however, one serious drawback to the advantages he possesses. His labour is slave labour, the cause of the present unfortunate strife, and, so long as this is relied upon, it becomes an element of uncertainty and danger. My hope, however, is, that the prospect of its abolition is now nearer than before, and that when the South has achieved its independence, events will compel it to take measures to place itself in harmony, upon this question, with the general opinion of the civilised world.

Egypt.

The country which, next to America and India, *furnishes* us with the largest supply is Egypt. The cultivation of the species of the cotton plant now known there dates only from the year 1821, when it was brought under the notice of Mahomed Ali, by M. Jumel, a French mechanician. Its first export to this country was in 1823, when over 5,000 bales were imported. Last year 150,000 bales were received, an increase of 50 per cent. upon the previous year, and the present crop is estimated to be 200,000 bales, which, at present value, will amount to six millions sterling. Egypt is calculated to possess 7,000,000 acres of land capable of being cultivated, of which 4,000,000 are in a state of cultivation, but of these only 350,000 are occupied by cotton. Irrigation is essential, and it would appear that the network of canals to effect this was much more extensive in former ages than at the present day. The extension of these works and their preservation is the especial duty of the government, and the increase of production and improvement in quality, are dependent upon the facilities possessed for irrigation by the cultivators. The rude implements of husbandry, little superior to those in use in the days of the Pharaohs, are a hindrance to more successful cultivation, as also the want of improved machinery for separating the cotton from the seed. This latter, however, is gradually being removed, as several hundred gins are now at work in the hands of capitalists, turned by steam power, and clearing the cotton as economically as it is effected in the Southern States of America. A system of classification has also been introduced on some of the large estates, which has enhanced the value of the crop 2d. per lb. The tenure of the land is satisfactory to the fellah, and is not heavily taxed. Mr. Fowler, of Alexandria, a resident for several years in Egypt, in a very able report upon the cultivation of cotton in that country, says—"Where land is properly cultivated, and the cotton plants sufficiently watered by artificial irrigation during the growth, 500 lbs. of clean cotton per acre may be produced," and he adds, "There is in fact no question that the lands at present cultivated in Lower Egypt might be made to yield fully double, and probably treble, the actual amount of produce by an improved system of husbandry;" and he concludes by observing, "When it is considered there are at the present day nearly three millions of acres of fertile land fitted for cultivation in Lower Egypt, with a soil and climate admirably adapted for producing cotton, with the facility and cheapness of annual fertilization by the inundation of the Nile, with cheap and facile means of transport by this river and its canals, and the additional facility of railways to the port of Alexandria for export, it is not too much to say that Egypt in a few years, supposing only one-third of the cultivated land sown with cotton, might advantageously produce and export annually one million of bales."

We have further the valuable testimony of Mr. Byrne, who has long resided in Egypt, and had much practical experience in cotton cultivation. He says:—"There are 3,000,000 acres of fertile land in Lower Egypt, of which 350,000 only are sown with cotton. There is no reason why this crop should not be at least doubled on the lands already working, leaving out altogether the unclaimed and desert parts of the country. There is not the slightest doubt that, were the natives taught by force of example to bestow more care on the levelling and working of their ground, and to avail themselves of more efficient agricultural implements, the present average yield per acre might be greatly increased." He further observes:—" During the past season, the experiment of sowing New Orleans seed has been tried on a small scale on the estates of the late El Hami Pasha, and having the result under my own observation, I am of opinion that the extension of this seed would be of great advantage. The plants are even hardier than the native long-stapled cotton, and the cotton is a kind evidently well suited to this climate, and though the shortness of the staple places its value below that of our own cotton, yet, when artificially watered before the flow of the Nile, the yield has averaged one-third more than of fine Egyptian. The colour is very white, and samples sent to England having been classed as equal in every way to good Orleans, it is evident the increased yield will more than compensate for the loss in price."

In Egypt, as in most eastern countries, the material prosperity and social condition of its people depend chiefly upon its ruler. In the absence of a middle class of society private enterprise flags, and all improvements tending to the development of agriculture, or the introduction of the appliances of European civilisation, must be brought about chiefly by the governor. The late viceroy, Said Pasha, was not negligent of this responsibility cast upon him. Upon his visit to Manchester last year, he expressed his warmest desire to extend the cultivation of cotton in his country, and his readiness to consider any suggestions made to him to contribute to that object. It was submitted that the maintenance of canals for irrigation, and their increase, was an essential requisite, and that the introduction of American seed into Upper Egypt, where as yet cotton is not cultivated at all, would be desirable, as introducing another variety more extensively in demand, and as enlarging the area of present cultivation. He observed, in reply, that, in regard to the first suggestion, he was engaged already in its performance, and as to the second, he would direct it to be carried out. He intimated that the chief difficulties in the way of increase lay in defective husbandry and an exorbitant rate of interest paid by the fellahs upon money advances made to them; and he suggested that two or three skilful agriculturists should be sent over to give instruction to the cultivators, and that a bank or company be formed for the purpose of making advances to them at a more reasonable rate of interest. This latter idea has been taken up by Ishmail Pasha, his successor, who has intimated his intention to make the requisite advances himself to the cultivators. The new viceroy has the advantage of practical acquaintance with cotton cultivation, having the largest estates in the country, and producing the most approved quality. Much is expected from his vigour and intelligence, and with the finances of Egypt in a favourable position, he will be able to carry out those improvements which may be requisite for developing its agricultural resources.

It will be seen, from what I have already stated, that Egypt possesses many of the requisite advantages for cultivating cotton extensively. She has a settled Government, fully aware that the increased exportation of cotton will materially advance the interests of the country, a rich soil, facilities of irrigation, railway and water transit, easy access to the sea-board, and steam and telegraphic communication with the markets of Europe. The extent of her territory, as compared with America or India, is very inconsiderable, but I have no doubt of her capability, as already stated, of producing one million bales per annum.

In a communication lately received from a friend, who has returned to Egypt after two years' absence, he speaks of the immense strides made in wealth by that country within that period, and expresses his surprise at the great increase of European population.

Let us now turn to a country, like the preceding one, forming part of the Ottoman Empire.

ASIA MINOR AND TURKEY IN EUROPE.

There are merchants now resident in Smyrna who remember an export of 50,000 bales per annum from that port, but for several years past the cultivation of cotton has diminished and the exports been very trivial. In 1860, only 6,000 bales were exported; in 1862, 10,000 bales; but for the present year, the export is estimated at 50,000 to 60,000 bales. In a recent despatch to Lord Russell, the British Consul says, " It is the general expectation that the rend of 1863 will be at least 200,000 bales, or 72 million of pounds." This rapid increase of production is owing mainly to the unassisted efforts of the native cultivators. What, then, may be *the results when* foreign capital and skill are brought to bear upon a country whose climate, soil, and general capabilities, are highly favourable to the production of a good quality of cotton. It is not taking too sanguine a view to expect, in a few years hence, that 500,000 bales will be the annual production of the Turkish dominions in Europe and Asia.

The attention of English manufacturers has recently been specially directed to Asia Minor, from the results which have followed the introduction of New Orleans seed for cultivation. The native cotton, though clean and bright in colour, is short in staple and loose in fibre, but that grown from New Orleans seed is fully equal, in every respect, to the best growth of this cotton in America. Hence it is probable, if the cultivation of this seed be substituted for that of the indigenous, we may obtain from Asia Minor a supply of those special qualities of American cotton which are in such high repute with the majority of consumers, and which as yet no other country has produced. The British Vice-Consul, Mr. Maling, in a report (March, 1859) upon the experimental cultivation of New Orleans cotton in the district of Cavalla, in Turkey in Europe, the seed for which had been forwarded to him by the Cotton Supply Association, states, that the growth of the New Orleans plant has been much more luxuriant than that of the indigenous product; the latter in many instances rises above a foot and a half from the soil, while the former has averaged two and a half to three feet, and in some instances four to five feet in height. The native plant gives from 10 to 30 bolls, the New Orleans more luxuriant growth yields from 50 to 80 bolls. The average yield per acre of cotton bolls is 2,525lbs. of cotton; after ginning, 565lbs. When in bloom, the flowers are not liable to be knocked off the foreign plant by rain, as happens to the native cotton. The culture of the New Orleans plant has not proved more laborious nor entailed more expenditure than the native; indeed, a slight saving is effected by the former being more easily picked. This foreign plant has proved earlier in reaching maturity by a month in some instances, and generally by from ten to fifteen days. Native cotton is worth about 6d. per lb. It is not possible to say the relative value of New Orleans growth, so little having been produced that a fair mercantile value cannot be placed upon it. It is undoubtedly far superior in colour, fineness, and strength and length of fibre to the country produce, and this is so apparent, even to the unsophisticated native, that one farmer actually demands for the small sample he has raised a price equivalent to 10d. per lb. Mr. Maling shows, by a statement of the cost of production, that at a value of 6d. per lb., £5 10s. per acre might be realised as profit to the cultivator, but notwithstanding this proof, the superiority of the New Orleans growth, its more abundant yield by 20 or 30 per cent., and its culture not entailing a greater amount of labour or expenditure than is essential to the indigenous plant, yet a strong objection existed to its cultivation, arising from the collection of the tithe, which until recently prevailed in the Ottoman dominions. The farmer is not allowed to pick and house his cotton when ripe; he must wait the coming of the tithe collector, until he has inspected and formed his estimate of the standing crop. The native cotton will bear standing in the fields, but if the New Orleans cotton be not picked immediately when at maturity, the boll opens and the contents fall to the ground and are lost, or in great part wasted and discoloured. This subject was brought under the notice of the Turkish Government through his Excellency Musurus Bey, the ambassador, who has taken an active personal interest in promoting the cultivation of cotton in his official character, as well as on his own estates; the result has been the recent issue of an ordinance originating many important measures for the encouragement of cotton cultivation in the Ottoman empire. The tithe of produce is abolished, and in lieu a fixed tax is imposed ; uncultivated lands are converted into cotton plantations, and exempted from all taxes for five years; improvement of the roads is to be undertaken ; all implements and machines required for cotton cultivation are to be exempt from import duties ; no additional export duty is to be paid upon superior qualities of cotton, and foreign seed is to be distributed gratuitously by the government, with practical instructions necessary for its cultivation. These constitute a series of valuable reforms, which, if energetically carried out, must materially tend to a considerable extension of cotton cultivation in the Ottoman Empire. It were well that our Indian authorities would descend from their lofty assumption of superior knowledge of cotton cultivation, and take a lesson of practical wisdom from this sample of enlightened sagacity and statesmanship on the part of the Turk.

I may be told that the anarchial state of Asia Minor has hitherto been considered a bar to any extensive cultivation of the soil. But what is the cause of this anarchy? Does it not chiefly arise fron the non-employment of the population engendering habits of wild and lawless living? And what more likely to correct this than the introduction of new and extensive means of employment, by which a considerable sum of money will circulate amongst all classes, creating a demand for the wants and comforts of civilised life, and inculcating deference to order and good government. Am I too sanguine in supposing it probable that the cultivation of cotton will produce great and important social changes both in Egypt and Asia Minor, and that the long dreary decay of intellectual and physical energy in these Eastern biblical and classical lands will be superseded by the intelligence and vigour infused into their populations from the demands of Western industry and commerce.

I may add, as yet further evincing the interest taken by the Turkish government in this subject, that a special Commission, composed both of natives and foreigners, has been instituted to collect information as to cotton cultivation, and also that such is the confidence of capitalists at home in the success of these efforts, that a well-supported company has recently been formed in Manchester to promote the cultivation of cotton in Asia Minor.

BRAZIL.

Brazil is the country which comes next in supply after Egypt. Fifty years ago it forwarded 150,000 bales annually to this market, but for several years its production has declined; the cultivation of sugar and coffee, for which its soil and climate are admirably adapted, having superseded cotton. The quality produced is good, more valuable than New Orleans cotton, and ranging in classification with Egyptian. There is abundance of land, but labour is deficient, and greater energy and enterprise are required than the Portuguese possess. It is understood, however, that the present crisis in America has roused the interest of producers, that more land has been placed under cultivation, and a considerable increase upon last year's production is anticipated. 130,000 bales arrived in 1862, and the estimate for the present year is 250,000.

Peru has for several years produced a limited supply, of very excellent quality. It possesses a large extent of land close to the seaboard, has a favourable climate, and its soil will yield two crops in the year. The obstacle to production has been scarcity of labour, which the government is endeavouring to remove, by permitting the introduction of Chinese and Polynesian labourers, who are found to work satisfactorily. Though other pursuits have hitherto engaged the attention of its inhabitants, recent information leads to the expectation of a considerable increase in the production of cotton in Peru.

Our West Indian Colonies, which at the commencement of the present century furnished us with a large supply of cotton, now contribute a very insignificant one, the average annual production for many years past not exceeding 10,000 bales. The colonists, unable to contend with the low price at which the American planter could produce, have turned their attention to the cultivation of sugar and coffee, for the production of which the climate and soil are peculiarly adapted, and of which they export considerable quantities. It is not probable that the capital and labour thus employed will be diverted again to the production of cotton, though at the present exceptional high prices there might be a temptation to do this. Land not otherwise occupied may be turned to this production, but it will be only upon a small scale, the results of which will add little to our imports, nor materially alter the insignificant position which our West Indian Colonies hold as cotton-producing countries.

AFRICA.

We must now turn our attention to other parts of Africa, from whence it is said we are to receive large supplies from new fields of discovery. The French colony of Algiers has for several years been engaged in the cultivation of cotton. In 1844 attempts were first made; but in 1852, eight years after, the production was only 40 bales of 240lbs. each. In 1853 the government offered large premiums as a bounty upon cultivation ; and in 1861, 1,596 bales were exported. This is not a promising result after eighteen years' experiment. The climate is favourable, and the quality of the cotton, chiefly grown from Sea Island seed, is good, but the expense of irrigating the land, which is absolutely requisite, and the scarcity and high price of labour, ranging from 2 to 3 francs per day, are difficulties to be contended with, rendering it improbable that Algeria will become a large contributor to our supplies.

But it is to the West Coast of Africa that our attention has been specially directed. There is no question that cotton of good quality, equal to middling Orleans, is grown there, and, from the accounts of travellers, over a large tract of country. The natives manufacture from it a peculiar style of cloth for their own consumption, and for export to their countrymen in the Brazils. For some years past my friend Mr. Clegg, of Manchester, has laboured with commendable philanthropy to open up a trade in the export of cotton from this country. In 1855, five bales, of 400lbs. each, were exported; in 1860, this had increased to 580 bales, and in 1862, to 950 bales. The Cotton Supply Association has also rendered aid in the promotion of this object, but a pestilential climate, want of roads and communications, and, above all, the existence of the slave trade, and of a barbarous government, which renders life and property insecure, are formidable difficulties, and will postpone to a distant period the realization of that success with which all must hope these efforts may finally be crowned. The late governor of Sierra Leone confirms my views, and states, that whilst glad to hear of the benevolent attempts making to originate a trade in cotton amongst the negro tribes of the West Coast, he is of opinion a generation must pass away before any extensive results will appear.

But, I shall be reminded, that a large trade has arisen in palm oil, which 30 years ago had no existence, and why not a similar result occur with cotton? The production of palm oil is a rude and simple husbandry, requiring no skill in manipulation, nor any special supervision. Carried on along the seaboard, it has no difficulty in want of roads and communications to contend with, nor is it subject to expensive transit. I come to the conclusion, then, from the information before me, that no present important addition to our cotton supplies can be expected from the West Coast of Africa. We are laying the foundation of a trade in present effort, but a generation to come will reap the result.

These objections to the supply of cotton from the West Coast apply with equal force to the East Coast of Africa, which has the additional disadvantage of a more distant and expensive transit to contend with. Dr. Livingstone's discoveries will, for many years to come, add little to our cotton supplies, even though all must hope they will lead to the introduction of Christianity and its civilising influences amongst the barbarous tribes of the countries he has brought under our observation.

NATAL.

The colony of Natal has attracted attention as a cotton growing country, and a company, under excellent auspices, has been formed to test its capabilities. About twelve millions of acres are available for agricultural purposes, but only a portion of this, principally along the sea-board, is suitable for cotton. It possesses a favourable climate, and has advantages in soil and facilities for shipment. It is asserted that the cost of production does not exceed 4½d. to 5d. per lb., but the want of reliable organised labour is a serious difficulty to contend with. The native Zulu is not fond of steady application. At the season when his services are most in requisition, he takes it into his head to return to his native kraal, and the crop is left to be gathered as it may. This has frustrated individual efforts hitherto made, and indisposed the colonists to further cultivation, notwithstanding seeds and machinery have from time to time been forwarded to promote it. I understand, however, the Company propose to rely upon being able to cultivate with native labour, but if not successful, they will import Coolies, who, to some extent, are now employed in the cultivation of sugar in the colony.

The government is making praiseworthy efforts to induce the natives to cultivate cotton by the distribution of seed and by taking the produce at a fixed price in return. No report as yet has been made of the result of these efforts, but the opinion of the colonists is, I believe, unfavourable to their success.

QUEENSLAND.

The young colony of Queensland is making active efforts to become a cotton-growing country. There is abundance of land upon the sea-board extending 1,000 miles, with an average breadth of 60 miles. The soil and climate are very favourable, and the government of the colony takes an active and enlightened interest in promoting this object. New Orleans cotton has been produced at the rate of 600 or 700 pounds per acre, a larger quantity than the rich lands of Louisiana or Texas can boast of, whilst the quality is fully equal to either. Some Sea Island growth forwarded to the International Exhibition sold for 5s. per pound. Of this quality 400 pounds per acre could be grown, and as one man can cultivate four or five acres, the result of his labour, taken at the low estimate of 1s. per pound, would amount to £100. But from a country where European labour is paid at from 10s. to 15s. per day, it is vain to expect a large export of cotton, if dependent upon this class of labourers. If Queensland is to compete effectively with the Southern States of America, it is indispensable she should obtain Asiatic labourers. Hitherto objections have been taken by the colonists to this step being adopted, but recently, I believe, the legislature has passed an ordinance permitting their admission.

I think it only due to my hon. friend in the chair to add, that he has been unremitting in his efforts to bring before the Government and colonists of Queensland the importance of cotton cultivation to the colony. The Cotton Supply Association has also forwarded a considerable quantity of seed for distribution amongst the emigrants from this country, and we may confidently indulge the hope that, with an abundant supply of labour, the 200 bales estimated as the probable export from thence this year, are but the commencement of the large contribution she will ultimately make to the supplies of the world.

ITALY.

Previously to the recent International Exhibition, few people believed cotton could be cultivated in Italy, yet it forwarded 56 samples of various growths to the Exhibition, of which more than half, or 29, were valued as equal to or higher than the New Orleans quality. Its culture, too, is of ancient date, for, in the tenth century, it formed, in the southern provinces of the main land and in Sicily, one of the chief products of agriculture. Even at the commencement of this century it supplied the chief markets of Europe, but for many years *past its* culture has diminished, and the present annual production is not estimated at more than 5,000 to 10,000 bales.

The Italian Government is desirous to take vigorous measures to renew its cultivation, and by its direction Count Devincenzi, the Italian Commissioner at the Exhibition, has issued a very able and accurate report upon the subject, in which he shows that 3,000,000 of acres are available; that labour is abundant and cheap, not exceeding a franc per day for a man, and half that sum for a woman or a boy; that there is an extensive coast line, and railways made, or under construction, to the districts to be appropriated, and he estimates the cost of production at from 4d. to 6d. per lb. With all these advantages, and in close proximity to the European markets, Italy may in a few years be an important source of supply.

China, for the first time, has exported cotton to Great Britain, having during the last year forwarded 4,400 bales. The quality is similar to that from Bengal, but clearer and brighter in colour. Cotton was probably imported into China from India, and has for many centuries been extensively cultivated for domestic consumption. The claims of its dense population, and the absence of large tracts of waste land to extend upon, must prevent China from becoming a cotton-exporting country. Sir John Bowring, however, is of opinion that it is capable of affording to us a large supply, and that our attention should be directed more to that country than to India. I have not been able to meet with information which would substantiate this opinion, and I should have more confidence in its correctness, were the Chinese to cease competing with us in the markets of India, from whence, in 1860, they drew 200,000 bales. Considerable quantities are grown in the neighbourhood of Shanghai, and as the usual value there is from 3½d. to 6d. per lb., and its present price here from 1s. to 1s. 2d., we may expect some further supplies from that port to find their way to this country during the present year.

From Siam, Persia, and Japan, small quantities of cotton have arrived during the course of last year. The quality resembles that of Indian cotton—short and inferior in staple, but well cleaned, and in better condition. I refer to these supplies only as a subject of interest in connection with the source from whence they come, and not as indicating the capability of these countries to afford reliable supplies for our wants.

INDIA.

I now come last to India, the country which, next to America, is the most important source of our supply. India has for centuries past been a cotton-producing country; and if we are to credit the statements made as to the extent of its annual production—from four to six millions of bales—it must be admitted to be the largest cotton producing country in the world. It is unquestioned that the area of land capable of growing cotton is greater than that of America, and that its abundant free labour is much cheaper than the slave labour of the Southern States, probably to the extent of 80 per cent. Of this large production, however, only 560,000 bales were received by this country in 1860, whilst America forwarded 2,580,000, and the comparison in which these qualities entered into consumption in that year, was, as I have previously stated, American, 42,000 bales per week, or 85 per cent., and Indian, 3,350, or 7 per cent. The inquiry naturally arises, if India be the largest cotton-producing country in the world, if she possess a larger area of land, and a more abundant supply of free labour than America, how is it she has not been able to compete more successfully with her rival, and why does the consumption of her produce hold so inferior a position in the markets of the world? Various replies have been made to this question. Indian authorities tell us the consumer is prejudiced; he is ignorant of his true interests; he has so long been habituated to the use of American cotton he will not investigate the merits of any other. Others darkly hint that he has a special affection for the produce of slave labour. But what is the fact? We must presume the consumer understands his own business. He resorts to Liverpool, the great cotton mart of the world, for the supply of his raw material. He has there placed before him samples of every variety of cotton produced in every part of the world, and he finds none so inferior, and of so low classification, as that which is the product of India. It is short and weak in fibre, defective in colour, imperfectly cleaned, mixed with sand and dirt, and frequently adulterated with an admixture of a still more inferior quality. If, tempted by the lower price at which it is offered, he purchases it for consumption, he sustains a loss of 25 to 30 per cent. waste as compared with 12½ to 15 in American, the production of his manufactory is diminished, and his workpeople find the amount of their weekly earnings reduced in proportion to the lessened production. Hence the use of Indian cotton is confined to the low coarse fabrics, in which price and economy are more regarded than quality, and in which its deficiencies are not so obvious, and any increase in the demand for it only occurs under a deficiency of American supplies.

Now, if we turn to regard the conditions under which the cotton of India is cultivated, we shall find a striking contrast to those we have been contemplating in operation in America. The Indian cultivator is an inert and unintelligent labourer. Capitalist you cannot describe him, for the cattle and implements of husbandry which constitute his wealth are few in number and insignificant in value. The mode in which he performs the operations of husbandry is of the rudest character; has been handed down from time immemorial by his forefathers; is unquestioned by him, and carried on without change. He scratches the surface of the soil to the depth of two or three inches; sows his seed broadcast, or intermingled with other crops; pays no attention to weeding or pruning; and is careless as to the picking, for his crop is sold in anticipation to the bunyia, or native banker, who has advanced upon it, and in whose power he is constantly held, and it is therefore indifferent to him whether he picks the cotton from the ground or carelessly from the tree. He sells by weight, and not by quality. He therefore adulterates, and this system of fraudulent adulteration is carried on by every successive intermediate agent, until the arrival of the cotton at Bombay. Unlike the American planter, he is deprived of the advantages of railways and water communication. His produce is carried hundreds of miles on the backs of bullocks, exposed to all the vicissitudes of weather, and the necessary deterioration which ensues. Can we be surprised if the result of this rude and imperfect system of culture is the production of cotton very inferior in quality to that which the American planter offers to the English consumer, and that the latter gives a preference to the one and discards the other.

But it is said by some advocates of things as they are, that the production of cotton in India is a question of cost and price, and that if you introduce a more expensive system of cultivation, you will add to the former, with doubtful increase to the latter. This appears to me altogether erroneous. I at once admit the capability of India to produce cotton as cheaply as America, and therefore I contend it is not a question of cost and price, but a question of quality. With a better quality would follow a higher price, and with improved cultivation a larger product, fully remunerating for any increase in the cost. The improved estimation in which the article would then be held in the English market would ensure a steady and reliable demand, in place of the present fickle and uncertain one, and the consumer would possess a protection, he has not hitherto had, against a failure in the supply from the Southern States of America.

The problem then to be solved is, "Can India, by any system of improved cultivation, produce a better quality of cotton, and if so, what are the means by which this may be effected?"

Let us first consider the solution offered by the testimony of official records:—

In 1841, the East India Company engaged a *number of* American planters from the United States, for the purpose of introducing into India a better system of cotton cultivation. The result may be stated in the words of an official despatch by the late Sir Robert Grant, formerly Governor of Bombay, who reports, "That the cotton experiments would not succeed in the Southern Mahratta country, and that the revenue commissioner had made it equally clear that they would not succeed anywhere else; that the experiments had been sufficiently tried and failed." The American planters also stated previously to leaving India, "That the staple of the cotton of Western India is as long as that of the New Orleans, and equally as strong, and it is erroneous to suppose that the introduction of the American varieties could be attended with any benefit to India." Upwards of a quarter of a million sterling was expended by the government upon these experiments, but in no instance did they succeed. In July, 1861, Lord Canning appointed a gentleman in each of the three Presidencies to draw up a handbook detailing the results that had accrued from the past efforts of the government to improve the cultivation of cotton in India. These gentlemen having only the records of failure from which to collect their material, could not do otherwise than report unfavourably as to the utility of endeavouring to improve the growth of this staple. Their adverse conclusions might have been anticipated. Accordingly, we find his lordship expressing himself as follows, in a letter dated July, 1861, addressed to the Cotton Supply Association:—

"The general testimony of the best qualified observers, American as well as English, goes to prove that in the details of cultivation, the native of India has little or nothing to learn from the agriculturists of other quarters of the globe."

Sir William Denison, Governor of Madras, in a letter to the same body, dated October, 1861, writes thus:—

"The extensive districts of what is emphatically called 'cotton soil,' though well adapted to produce 'native cotton,' which is short in the staple, and strong, not to say coarse, in the fibre, is not congenial to the growth of the finer species of American cotton. The experiments which have hitherto been made in the cultivation of cotton on this soil have hitherto been unsuccessful."

If, therefore, we are to be guided by the result of these official records, we must answer the inquiry instituted in the negative, but, unfortunately for their reliability, though, happily, for the interests of India, facts enable us to reply in the affirmative.

Last Wednesday evening, in the interesting paper read before this association by Mr. Shaw, he gave an account of the successful introduction by him of American seeds into the district of Dharwar, not under the auspices of government, though he was a government official, but by the exercise of his own personal influence over the ryots. After contending with difficulties for many years, he established the growth of the best quality of cotton, now extensively grown in India, extending, as he observes, by the last official accounts, over 200,000 acres. It is somewhat singular that the results of Mr. Shaw's labours were unknown to Sir W. Denison, and that at the time he penned the despatch above referred to, Mr. Haywood, deputed as the Commissioner of the Cotton Supply Association and the Manchester Cotton Company, was travelling in one of the Madras districts, and reported as follows:—"I have seen in Bellary, so far as I have gone, finer and healthier-looking plants from American seeds than in Dharwar. The people in this district and the Nizam's territory have for some years grown cotton from American seed, and value it more highly than the native species." On one occasion, when asking a native why he did not go to the Kupput Hills close by, and get gold, as M. Le Souf was then doing, aided by a company at Bombay, the ryot pointed to his American cotton-field, and said, "That is our gold; it fills our houses with money." Again, Mr. Haywood observes, "In some districts 2lbs. of American cotton are produced to one of native from the same area." Of another district he reported, "that the ryot obtained as much as 672 lbs. of this seed cotton to the acre." In Liverpool the Dharwar American seed cotton sells at 20 to 30 per cent. higher than other Indian qualities, and is eagerly sought after by the consumers as a substitute for ordinary American quality. From these unquestioned facts, as to the success of Mr. Shaw's labours in the Dharwar district, we are justified in the conclusion, notwithstanding official records, that India can grow cotton of an improved quality. It is true that samples of every variety of cotton have been frequently exhibited as the produce of India; they are, however, the results of limited experiments, made under European superintendence, and can only be considered as experiments. But, in the case of Dharwar, we have the trial made by field cultivation, upon an extensive scale, and by the agency of the ryot, who, now aware of the value of the exotic seed, is extending its cultivation. Had Mr. Shaw's labours been appreciated by the Government, and followed up by them in other districts, Lancashire would not now have been in want of a good quality of Indian cotton.

The agency by which the introduction of an improved quality of cotton is to be effected in India, appears to me to rest with the government. Mr. Shaw was a practical agriculturist, an able and energetic man, but without the influence he possessed over the ryots as a Government official, an influence all-powerful in India, even his skill and energy would have been unavailing. In all oriental countries the government leads and directs, and India is no exception to this rule. I therefore agree with him that the government, in its capacity as landlord, should take this matter in hand, and appoint a certain number of gentlemen duly qualified to act as agricultural or cotton commissioners in certain selected districts, who should aid the ryot by a distribution of foreign seed and improved implements of agriculture, and circulate information as to the best modes of cultivation. Merchants would follow in the creation of agencies and erection of ginning establishments, and a stimulus would thus be given over a large extent of country, and results produced which otherwise it might take generations to accomplish. I am aware it may be said this work, however important and valuable to the interests both of India and England, does not devolve upon the government by any principle of free trade or political economy. But what is the government already doing in India? Are the undertakings in which it is actually engaged in conformity with the principles of free trade? Why should the growth of opium, the manufacture of salt, the cultivation of tea, the establishment of iron works, be considered as legitimate objects of government enterprise, and yet the improvement of the cultivation of cotton, an object of far greater importance than any of these, be ignored? I do not admit, however, that it is a violation of the principles of political economy. Under the circumstances of our rule in India, I regard it simply as a discharge of the duty of government in its character of a landed proprietor.

From what has been stated of the rude system of agriculture adopted by the Hindoo ryot, it is evident the introduction of European skill and capital is requisite for its improvement. To this, however, there are serious obstacles, and to the more prominent of these I will briefly allude.

1st. The want of roads and other means of communication and transport.

2nd. The system of land tenure, which prevents the investment of capital for purposes of improvement.

3rd. The want of security for capital in the absence of an efficient contract law, and of a system for the registration of contracts, and in the inefficiency of the country law courts. The question of roads for India is one upon which all parties are now agreed, and during the last few years it must be admitted that efforts have been made to remedy the neglect of the past. Much, however, remains to be done, and in districts opened out by *railways, tramways*, or country roads, will be requisite to develope traffic. Bullock travelling, at the rate of two miles per hour, will not compete with the network of tramways which intersect the Southern states. In the year 1860–61 the outlay in India, under the head "Communications," was as follows:—

	Square miles.	Population.	Expenditure in Rupees.	Expenditure per head.	
				Pie.	d.
Bengal	253,000	40,852,397	1,003,021	5	⅝
N. W. Provinces ...	108,000	30,250,000	1,091,615	7	⅞
Punjaub	95,600	15,467,821	1,294,308	16	2
Bombay	140,407	12,038,113	1,067,180	17	2⅛
Madras	136,872	23,301,697	1,525,545	10	2¼
Ceylon	24,700	1,876,469	1,598,110	164	20½

Ceylon expended, therefore, 24 times as much per head of the population as Bengal and the North-west Provinces, and about ten times as much as either the Punjaub, Bombay, or Madras. To this advantage, in facility of communication, with the sale of its waste lands, and the abolition of the Indian policy of land tenure, may be attributed the present flourishing state of Ceylon.

The policy of constructing the roads out of revenue is most costly, as it often occurs that estimates cannot be sanctioned till a considerable part of the year has elapsed, when hasty and desultory demands for labour cannot be met, and a large number of officers stand idle upon their pay. It was in view of these defects, and in order to hasten the construction of necessary public works, that the Cotton Supply Association, six years ago, submitted the following proposals to the East India Company and Board of Control:—

1. That for the purpose of more effectually developing the resources of India, a Commission should be appointed, to be called a Board of Public Works for India, that money should be borrowed for the purpose of forming and making roads, bridges, railways, tramroads, piers, landing stages, increased facilities for navigating the rivers and estuaries of India, and also for works of irrigation.

2. That the tolls and income derivable from such works shall be appropriated first in payment of interest on loans and expenses of management, and the residue shall be applied in redemption of the capital invested by such Board. That the Commissioners shall have power to re-invest all excesses of income beyond expenditure and redemption, provided the sum of twenty millions be not exceeded as a loan.

3. That the Board should have power to borrow any sum not exceeding four millions sterling per annum, for a period of five years, and report annually to Parliament the progress of their works, the amount of loans, and income.

Had this proposal been adopted and acted upon, a much more rapid advance would have been made in the execution of public works, and a more striking change been visible in the traffic of the country.

I may here advert to the discouragements which government too frequently places to the undertaking of public works by private enterprise. The Indus Navigation Company, and the Madras Irrigation Company, are instances in point, but the most recent is the case of the Manchester Cotton Company, to which I will refer more particularly.

In the spring of 1861, the Directors of this Company, with a view to the opening of a trade with the cotton districts of Dharwar, arranged with the Indian government for the construction of a pier at the harbour of Sedashegur, and the formation of a road from thence to the Dharwar district. Upon the understanding that these works would be at once proceeded with, the directors prepared cotton presses, gins, and other machinery, for transmission from England to Sedashegur. Two vessels have been freighted to that port, and a staff of European workmen sent out, but although the road and the pier were promised to be finished by the end of 1861, neither is yet completed. The operations of the company are therefore suspended, and great loss and disappointment have been occasioned.

It is unfortunate that railways in India were projected more with reference to military and political considerations, than commercial, and thus many cotton-producing districts are very imperfectly served by them. The great central district of Berar, in which is to be found the most extensive cultivation of cotton, had no railway sanctioned to it until the crisis in America arose, and some time will yet elapse before it is completed.

It is admitted that the American planter enjoys a great advantage afforded by navigable rivers, down which he can float his cotton 1,000 miles at the cost of one-eighth of a penny per lb. A similar distance in India would cost twenty times as much. Attention ought therefore now to be directed to affording the ryot similar facilities, and to the formation of canals for the purpose of navigation and irrigation, and thus produce, which can ill afford the cost of railway carriage, could be conveyed without the uncertainty and loss now entailed by bullock traffic.

Upon the question of land tenures, a subject involving political, financial, and commercial considerations of great interest, it is not my intention to enlarge. For some years past opinion, both in India and England, has tended to the conclusion that government should dispose of all waste lands in fee simple, and that the redemption of the land-tax should also be permitted. In 1858, Lord Stanley, by a minute, directed the sale of waste lands in the possession of the government, but this remained a dead letter until Lord Canning, previously to his departure from India, issued his celebrated minute, by which not only were the waste lands to be offered for sale in fee simple, but redemption of the land-tax to one-tenth of the land revenue was sanctioned. This minute has subsequently been suspended by the present Secretary of State for India, Sir Charles Wood, who, in reference to waste lands, has directed surveys to be made, which may occupy years in completion, and has withdrawn permission to redeem the land-tax save in a few special cases, and established in its place a perpetual settlement, surrounded, however, by many reservations, not likely to facilitate its early adoption. A perpetual settlement is certainly an improvement upon existing tenures, but why not permit the purchaser to make his option between a fee simple tenure and perpetual settlement? The position in which the land tenure question now stands is an unsatisfactory one, and any expectations as to its present arrangement promoting the extension of cotton cultivation must be abandoned.

It has frequently been urged upon the manufacturers of this country to send agents into the interior of India to displace the existing middleman, and put themselves in direct communication with the ryot. In the absence of a simple and efficient contract law, and with the corruption of the country law courts, this advice is as absurd as impracticable. Mr. Shaw's authority on this point will not be questioned. He says:—"We hear a great deal of its being the duty of the manufacturers to proceed to India to cultivate cotton, not that such is their duty, for were the whole Chamber of Commerce of Manchester in the present state of India, landed in any of the cotton districts, I have no hesitation in saying (and every practical man conversant with the natives will endorse that opinion), that the only means they would have of procuring a bale of cotton would be through the agency of those very middle-men who hold the ryots in subjection, and who would drive a profitable business also with them." But assuming the attempt were made, the ryot could only be dealt with by a system of advances, to aid him in sowing and preparing his crop. What security has the trader for the return of his advance, or the fulfilment of the contract made between him and the ryot? Upon this question, let us hear the evidence of Mr. Landon, an authority of great weight with Sir C. Wood. He states, in evidence *given before* the Colonisation of India Committee, July 16, 1858, as follows:—

No. 8,399.—"The native courts are corrupt generally, from the judges downwards. I advanced money on a contract. When the cotton should have been delivered he refused to deliver. I asked him, 'Why do you refuse to fulfil your contract?' He replied, 'If you go to the Court I can keep you out of your money four or five years. In nine months I got a verdict against him. The Court examined a witness one day, then postponed the case a month. The Court then examined other, and again postponed at its pleasure, and so on. The defendant appealed to a Superior Court, who confirmed the decision in my favour for principal without interest. The defendant, though a man of wealth, had no property that I could seize; he had corruptly made it away. After two years I managed to get about 75 per cent., with interest, and paid my own costs. Witnesses can be got to prove anything required. If there were a summary process money could be recovered. The natives practise these frauds upon each other, and complain of the system of administering justice. It took me two years to recover, from first instituting the suit to the final decision, in the Upper Court. So much for Civil Courts."

A more recent authority, the Hon. Mr. Scott, a merchant in Bombay, and a member of the Legislative Council, in a speech made on the 12th April, 1862, in a debate upon the Breach of Contract Bill, is reported to have said:—"No one can consider the establishment of such agencies more desirable than I do myself; no one can anticipate greater benefit from them than I do. Without them I do not think that we shall ever get to the root of the evil, or effect any material improvement in the quality of the Indian cotton. Believing all this, and admitting all this, I must still emphatically declare that no prudent European merchant dare, in the existing state of the law, establish such agencies on a large scale without some system of easy registration of contracts, and without some summary law for the enforcement of contracts, criminal or otherwise—I don't much care which. He would be going to certain loss. On the 6th May, 1852, we contracted with a person in the Dharwar district for the delivery of a certain quantity of cotton, and, according to custom, paid half purchase money in advance. He failed to deliver, and we sued upon the contract. We obtained a decree in the Sudder Ameer's Court on the 23rd November, 1853, and on appeal in the Judge's Court on the 27th November, 1854. The defendant then appealed to the Sudder, and his appeal was dismissed with costs, on the 30th January, 1857. His property was then attached, and almost simultaneously he died. Claimants then rose up against the attachment. We again obtained decrees in our favour, and an appeal was again made in August, 1861. Ten years' fighting for a paltry sum, which would have been abandoned long ago, save that we objected to being "done." The firm to which I belong is the only one on this side of India which has attemped such operations (advances up country) on a large scale, and in my own earlier career in India I had a great deal to do with their management up country. A history of our doings is on the records of government, and I need not enter upon it here. Suffice it to say that, after fighting against all difficulties for ten years, after expending large sums in machinery, and in the importation of foreign cotton-seed, &c., we were obliged to withdraw our agencies, and abandon altogether a large sum in outstanding advances. What caused our failure? The want of a system of registration of contracts, and the want of some means of summarily enforcing them. Give us these, and we will commence again, and so will many others. Without them we can do nothing."

What testimony can be more decisive as to the utter inefficiency of the existing law of contract and the necessity of its immediate amendment.

Several attempts have been made by the Councils of India to pass a law for the punishment of fraudulent breach of contract, but the Secretary for India has hitherto refused his sanction to them, upon the ground that the law proposed would act oppressively to the native. But where is the distinction in fact between the case of the ryot refusing to fulfil a contract entered into, and that of the English labourer or artisan, and yet the latter, upon refusing to complete his contract, is treated as a criminal, and committed for trial. If this procedure be justified in the case of an intelligent, skilful English artisan, it cannot be considered harsh treatment for a fraudulent Hindoo ryot.

The interruption of the American supply has made itself felt in India by an increase in its exports of cotton. In the year 1860 only 563,200 bales were received in England; in 1861, 986,600; and in 1862, 1,072,400. The estimates of this year vary from 1,200,000 to 1,300,000 bales. Should the former figures be realised, the increase would be more than double the import of 1860—a considerable increase—and yet, perhaps, not so much as might have been anticipated, after the stimulus afforded by the high prices of the two last years.

The present crisis has appeared to some to be the great opportunity for which India has long been waiting. They had hoped that, with the attention of the commercial world directed towards her, and with an unprecedented demand for her native products, her vast resources might at length be developed to their due extent. And could I see any efforts making in the direction of those successfully carried out by Mr. Shaw, in Dharwar, and the government using its power for the removal of hindrances and abuses, then might we anticipate the realisation of such hopes. But in the absence of these efforts, I greatly fear that though the continuance of the American war may, under the influence of high prices, force a considerable production of cotton, yet when the planter of the Southern States is again enabled to enter into competition, the Indian cultivator will have to resume his former subordinate position.

It may be thought that the view presented in this paper is unduly gloomy and desponding, and I must confess that I cannot contemplate the immediate future of the cotton manufacture without very grave apprehension. But may we not hope that beyond this intervening period there are promises of brighter augury, when, with industry resumed, and trade established on a more solid basis, the results of this time of trial shall appear—when the endurance and self-control of the suffering operatives shall win for them the confidence and esteem they deserve—and when they, in turn, shall learn from the aid so freely rendered to them in their need that the social distinctions, which they have regarded with so little favour, have been powerless to isolate them from the universal sympathy of their fellow countrymen—when our excessive dependence upon the results of slave-labour shall no longer furnish a taunt for our enemies, nor awaken the shame of those benevolent men amongst us who have erroneously regarded our compliance with ordinary commercial laws as complicity with slavery itself—but when the very failure of this source of supply shall extend to other lands all those material and social advantages which British capital and civilisation can confer on communities hitherto sunk in barbarism, or oppressed by poverty.

DISCUSSION.

Mr. A. Nesbitt Shaw said it would be out of place for him to pass any encomium upon the very able and interesting paper read by Mr. Cheetham. The few remarks he intended to offer were not altogether founded on his own experience, but more upon the experience of those who were perhaps better qualified than himself to give an opinion on the subject. There was only one way of extending the cultivation of cotton in India—that was to improve its quality; and there was but one way of improving the quality, namely, by introducing the ordinary varieties of the American cotton. There were many persons who held the idea that it was merely a question of price, and that if the manufacturers of Lancashire were willing to give the price, they could get as much cotton from India as they desired. This, in some respects, was true, no doubt, but no manufacturer would give the price for an inferior article when he was able to obtain one of superior quality for the same money. The agriculturists of India perfectly well knew that as soon as the American ports were reopened the demand for Indian cotton would cease, and although the price of cotton at Bombay was now five times as much as it was three years ago, yet the cultivation had scarcely increased. To improve the indigenous Indian cotton, with a view of making it capable of competing with the American varieties, was hopeless. It was as hopeless to attempt to give to the native Indian cotton the character of the American, as to convert white currant trees into red. No man who had seen the native plant could mistake it for Mexican, or New Orleans, or Bourbon, or Sea Island. He might adduce the evidence of a practical man now in Liverpool, who held the idea that nothing was required in India but high cultivation to improve the staple. This gentleman went out to India and cultivated highly the Indian cotton, and at the end of the year he compared its staple with that grown by the ryots. He found it exactly the same. He was not satisfied with this, but exported seeds to several localities, and cultivated them highly; he again compared the products with those of the ryots, and he found no improvement at all. He was not prepared to say that no amount of high cultivation would improve the staple of cotton; but this he did not hesitate to assert, that the safest and speediest way to improve the staple was to get rid of the native plant in those districts where they could grow the exotic, and introduce the New Orleans variety. Moreover, the New Orleans produced nearly double the amount per acre as compared with the indigenous cotton, and would cost no more to cultivate. With regard to the anecdote related by Mr. Bright, of a working-man exclaiming, when told that a fresh supply of cotton would probably soon come to hand, "I hope it will not be from Surat," he (Mr. Shaw) would remark that this exclamation did not express a mere prejudice on the part of the operatives against Indian cotton, but a real objection, founded on the fact that the wages they could earn in working up that cotton were considerably less than in working the American. It was not a mere question of machinery; the existing machinery might work up Surat cotton, but it was a question of profit and and loss to the workman. With reference to the kind of aid which it would be desirable to obtain from the government, he did not ask for any measure in opposition to the rules of political economy, but he believed that, until the government gave a certain amount of aid, they would never grow cotton in India. Twenty years ago, when the American seed was first introduced into India, particularly into the Dharwar district, it was avowedly and openly under the protection of the government collector, who encouraged it in every way, not, however, by putting pressure upon the ryot. No ryot had lost a farthing by the cultivation of American cotton. The collector never turned a deaf ear to the complaints of the ryots. Many ryots complained that they had lost money by growing American cotton. The collector knew that that was not true, but he never hesitated to listen to them, and he treated their complaints with respect. In the year 1847, there was a comparison made, at Bombay, of this cotton and the native, and, as he had mentioned, the merchants appeared to prefer the native, and he (Mr. Shaw) was taunted with having bestowed a great deal of zeal in the wrong direction, and was told that all he had done was to produce a cotton a little worse than the native. The reports from Liverpool, however, gave a different version of the value of this cotton. When this was seen, the government sent out to India to know why the cultivation of cotton had so greatly fallen off, and the reply sent back was that he (the former collector) had coerced the ryots, and when they were left to themselves the cultivation had fallen off. That was not the true reason; it was because it had been circulated through the district that the American cotton was worse than the native cotton. From information which he had recently received, he had learnt that the Dharwar cotton, though it had been adulterated, had not degenerated, but had improved in staple, and the yield was larger. The question of adulteration was a most serious one. Such was the state of adulteration of the New Orleans cotton in the Dharwar district, that unless the government took up the question in an energetic manner, the whole of this cotton trade would go to destruction. The government had passed an act, one clause of which exacted a penalty of 1,000 rupees, or imprisonment for 12 months, for the adulteration of cotton, and yet the whole of the cotton of the country was admitted to be adulterated. If this law were injudiciously enforced, as matters stood at present, every ryot would give up cotton cultivation, but if government would give them legitimate aid they would get cotton from India, but unless they did that, if they had not already lost all that had been done in Dharwar, they would very soon do so, and they would never get cotton from India capable of competing with that of the American States.

Professor Leone Levi called the attention of the meeting to tables showing the immense proportion which the cotton trade bore to the general trade of this country, both in its imports and exports, and having brought forward statistics in support of that position, proceeded to remark upon the various quarters of the world from which supplies of cotton might be looked for. In the present unhappy political position of America they could look for no present supply, and upon the cessation of hostilities they could not expect for many years to come the customary imports of cotton from that quarter of the world. With regard to Egypt and Turkey, he thought they were not much to be relied upon. There was such a want of good government in the provinces at a distance from the central power, that even if the central government were willing, they could not control the other portions of the empire; and, moreover, they had not that knowledge of the people, or that confidence in them, which would justify their trusting much to them. Therefore he did not agree with those gentlemen who had confident expectations that they would derive any large quantities of cotton from Syria or Egypt. Prof. Levi next referred to the improbability of large supplies from Queensland, Australia, New Zealand, or Natal, on account of the excessively high wages which labour commanded in those colonies. He believed that must for a considerable time, at all events, prevent many of the otherwise cotton-producing countries from affording them any large supplies. In his own mind, there were only three countries which could really give them anything of importance—those were America, India, and last, but not least, Italy. The latter country possessed the double advantage of a large extent of land suitable for cotton cultivation, and a large population, now earning very low wages, ranging from 10d. to 1s. a day, from which the necessary labour could be supplied, with the additional advantage that cotton cultivation was a thing well understood there, from the long period during which it had been engaged in. The productive quality of the soil of Italy was very great. It appeared that whereas in America the average quantity of cotton produced was about 300 lbs. per acre, in Italy it was in some cases 350 lbs., and in others as much as 500 lbs. per acre. There was in Italy a territory of 180,000 square miles capable of producing cotton, and ten millions of people who might be employed in that cultivation. The manufacturers did not require all their cotton to be of the best quality. The largest proportion of cotton worked in this country was of a middling quality, which was just the quality which could be produced in Italy to any extent. He thought *it would* be of immense benefit to Italy to extend this industry in that country; at the present time its exports were but small, and freights to its ports were high, because there was little or nothing for the ships to bring back. An additional advantage was to be found in the comparatively short distance which the article would have to be brought in order to reach the greatest mart in the world, and the delay of some months' transit, as from India, would be obviated. He hoped the fears entertained with respect to brigandage and such other local troubles would be removed by the energetic action of the government. Prof. Levi concluded by pointing out the great geographical advantages which Italy possessed in its immense extent of sea-coast, whilst, as regarded the interior, there would be abundant means of communication by the railways now in course of construction from the Adriatic to the Mediterranean.

Mr. Thomas Clegg, responding to the call of the Chairman, said he had not attended with a view of taking part in this discussion, and was not prepared to do so; but as his friend Mr. Cheetham had referred to what he had attempted to do, rather than to what he had done, he felt bound to respond to the call which had been made upon him. Although Mr. Cheetham had characterised his paper as a gloomy one, he felt convinced he had done good service in the details he had given of various countries; and having mentioned those countries, he would call upon this meeting to take advantage of them, and as probably most present had friends or connections in some one of the regions to which allusion had been made, he would urge upon them to endeavour each to procure cotton from the particular country with which he was connected. As far as Western Africa was concerned, he was quite aware that the Cotton Supply Association of Manchester looked upon him as an enthusiast, and as holding out promises he had not performed; but there was an old saying which ought not to be despised—"try again." Mr. Cheetham had told them that some little effects had already been produced, and that whereas in the first year he received only one bale of 120 lbs.—an ordinary bale being 400 lbs.—from Western Africa, last year the amount exceeded 900 bales, and that from a country which, only a few years ago, did not export a single bale. He was associated with a body of gentlemen who were endeavouring to develope the resources of Western Africa more fully than had yet been done, and they would find, by the last number of the *African Times*, that cotton had been sent to him from the river Niger, which, in one instance, produced 700 per cent., and in another 800 per cent. of its cost price on the spot. If that was not encouragement to their efforts, he did not know what would be. Mr. Cheetham in his paper, and Mr. Shaw in his remarks, had dwelt largely upon the subject of India. He was prepared to expect that Mr. Cheetham would have held out to them this evening a prospect of their getting the chief, if not the great bulk, of cotton supply from India; but he knew his friend Mr. Cheetham was one of those practical men who were guided by experience rather than theory. The Chairman, in his mills, had tested what East Indian cotton could do, and what it could not do, and that gentleman had arrived at the conclusion that, whenever they got cotton again in abundance from America, or from any other country which produced cotton of equal staple, colour, and cleanness, Indian cotton would again go out of use. He thought Egypt, however, was capable of producing an immense quantity of cotton; and looking to the fact that they had a stable Government there, that Europeans were flocking to that country in great numbers, and that money was being advantageously invested there, he believed it would progress and show a vast increase in the supply of cotton, even beyond the anticipations of Mr. Cheetham. With regard to Italy, he thought it came under the same category as Western Africa. They might look for future results, but they could not expect them at present. He took a tour of the Mediterranean in 1855-6, and included Italy in his route, and he saw growing there, in many spots, cotton which quite astonished the people when he pointed out to them the value of it. Upon the ruins of Pompeii, he found cotton which was worth 15d. per pound, but the people were wholly unacquainted with its value. India could only give them the quantity and not the quality of cotton, and there was a very erroneous impression on the minds of some persons that it was the quantity they wanted rather than the quality. It was not merely the adulteration of the Indian cotton that formed its chief defect, but the shortness as well as the coarseness of the staple. Let it be as well grown and as carefully cleaned as they were able to do, still there was the inherent defect in East Indian cotton which would always prevent its being of that useful class which they got from almost every other country. The Syrian cotton was of short staple, but better than East Indian cotton. The coarseness of the staple was also a serious defect. They could make coarse fabrics out of East Indian cotton, but they could not make the finer ones. They must have the finest Sea Island or the finest Egyptian qualities out of which to make the finest thread, and when he told them that the chairman, in the manufacture of his peculiar article from Sea Island cotton, employed no fewer than 215 individuals for every 1,000 lbs. weight, whilst Mr. Walmsley, and other manufacturers who worked the inferior cotton, only employed about 3¾ hands for the same quantity, they would be able to form some estimate of the difference. Therefore, they would see it was not merely a question of the number of pounds weight of cotton used, but of the employing powers of those different qualities for the great community amongst which they lived. He was not prepared to say more upon this question at present than that he agreed with Mr. Leone Levi as to its great importance, and he could not refrain from expressing his thanks to this Society for having given its attention to this subject. It was a question which concerned not only the Society of Arts, but the government of the country, and the world at large.

The Right Hon. Sir JOHN LAWRENCE, Bart., G.C.B., K.S.I., being called upon by the Chairman, said he had listened to the paper of this evening with great interest, and a great deal of valuable information had been imparted in it. Nevertheless, he could not help saying he thought justice had scarcely been done either to the authorities or to the people of India. He was quite sure that Mr. Cheetham was anxious to hear the truth, and to know what was the real state of things. He was quite sure that all who had been connected with India deeply felt the terrible crisis in which we were placed in this country with regard to the cotton supply, and were most anxious to do all they could to give stimulus to the extension of cotton cultivation in India. The real question was, what should be done to promote that object? What would give the desired impetus, and, at the same time, do what was right and fair towards the people themselves, so that in helping themselves they would at the same time help the people of India? He must say that a great deal of what had fallen from Mr. Shaw quite accorded with his (Sir J. Lawrence's) experience. The experience of Mr. Shaw had been principally in the western side of India, whilst his own had been chiefly in the north-western provinces. For many years he was collector in parts of India where large quantities of cotton were grown, and he must say the experience he had of cotton cultivation was that it was by no means so poorly cared for and attended to as appeared to be the impression of some people. On the banks of the Great Delhi Canal, on the Great Western Canal, and on the Eastern Canal, which ran through the upper part of the Gangetic provinces, there was a very large extent of cotton cultivation, and he did not think English or Scotch agriculturists would say there was better farming of the kind in any part of the world. The people were not only excellent cultivators, but they were trained to it from the time they could walk and think; and the cultivation had always struck him, as it had done others of more practical experience, as being most admirable. The deep ploughing, which was so necessary in a country like England, where they would have to expose the soil to the influence of the sun, was not essential in India: on the contrary, it was injurious. In England they wanted the sun to get at the land and dry it; in India, they wanted to retain the moisture in the land. He believed that long experience and great attention enabled the people in many parts of India to cultivate the land to advantage, and the cultivation of cotton in many districts was, in his opinion, exceedingly good. He was not prepared to enter into the reasons for it, but it certainly was the case that the American cotton had not been generally introduced into the north-west provinces. In a few cases it had been tried, but not to any extent; but one thing struck him, viz., that if the exotic cultivation succeeded so well in Dharwar, how did it happen that it was not extended into the adjacent districts? He did not know the reason for that circumstance, but it seemed to him very extraordinary. There could be no doubt that India had been much kept back by the want of means of communication, but at the same time a good deal had been done in that way of late years, more, he thought, than the people of this country were inclined to allow, for when they spoke of the contrast between the vast peninsula of India and the small island of Ceylon, the comparison was hardly a fair one. In the latter they had no frontier to defend, and no warlike races of people to look after, and a comparatively small expenditure in public works would produce great results in that island, which would not be felt in the vast continent of India. He must say he thought the tenures of land in India had no more to do with the cultivation of cotton, sugar, or rice, than the different tenures of land in England, Scotland, or Ireland, had to do with the agriculture of Great Britain. He believed a wise man, looking to the interests of India, would leave the tenures of land as they existed now. He would perhaps try to simplify them where he could do so, but at the same time would maintain in its principal features the system which he found. That was the only way to make the people happy and contented and appreciate our rule. They forgot that the people who held the land were as much attached to their occupations as we were to our institutions and property in England; and whatever might be good in theory was not the question. They must consider what the people appreciated and loved, and that to which they were endeared by the custom of ages. If they wanted to improve India this was not to be effected by sweeping away existing institutions, but by trying to civilise the people. English capital in India would do a great deal, but it must be judiciously employed by wise, intelligent, and good men, otherwise, good as it was in itself, it would become a curse to the country. They might not always be able to carry the people with them, although the principles they wished to introduce might be good in themselves; and by thus running counter to the feelings of the people they lost not only their money but their credit.

Dr. BEKE said Mr. Clegg having spoken of Western Africa, he would say a word or two with regard to

Eastern Africa, particularly that portion that lay within the dominions of the Pacha of Egypt. In the first place he wished to correct an important statement of Mr. Cheetham's as to the estimated produce of cotton in Egypt for this year. He had it upon the authority both of an eminent merchant in Alexandria, and from the Egyptian consul in this country, that the produce would be 300,000 bales of 500 lbs. each. That description of cotton, as Mr. Cheetham had stated, was not in Egypt in the year 1820. In about three years from the time that cotton was introduced into Egypt it was produced to the extent of 2½ millions of pounds. In 1784 America produced only seventy bags of cotton, and in 17 or 18 years it had not increased in the same way as in Egypt in the three years. The seed which M. Jumel saw growing in the garden of Mahomet Bey in Cairo, was brought from the upper provinces of Egypt, where it grew wild in the most luxuriant manner on even tracts of alluvial soil. He learnt from the last mail that they were now sending cotton from the Red Sea ports to Bombay, a thing which had never been done before; and looking to the fact that Egypt was the native country of cotton, they ought to look for large supplies from that quarter. He had mentioned these facts in Manchester two years ago, but he was not then listened to. Now, however, Egypt was forcing itself into notice.

Mr. **Henry Ashworth** said the question of cotton growth had been very widely considered as affecting a great many interests in connection with it, but there was one important omisssion, and that was the question of cotton as an article of clothing to the consumer. A very large proportion of the human race now found it necessary to have recourse to cotton in the shape of garments, and that interest had not on this occasion been brought forward as being of leading importance in the consideration of the general subject. In the absence of cotton, it could not be supposed that the hundreds of millions of people in the East could have recourse to a provision of clothing from sheep's wool; moreover, the available quantity of wool was so limited, that even if the climate admitted of their wearing it, the requisite quantity of it could not be produced, and the production of silk was also out of the question. Therefore, cotton had become an indispensable article of wearing apparel, and it was not only an affair of the unemployed manufacturers which they had to consider, but one which deeply concerned the varied interests of the world at large. They were told by Mr. Shaw, in the valuable paper which he read before the Society last week, that cotton had been grown in India at the very insignificant cost of three farthings per pound. He believed they would find, from various other statements, that there was scarcely any natural product that could be so extensively cultivated as cotton, or at so small an expense. It was also stated by Mr. J. B. Smith, the chairman of the previous meeting, and confirmed by Mr. Shaw and other gentlemen, that the same cotton which was raised in India at a cost of three farthings a pound upon the plantation, was ultimately sold in Liverpool at 6½d., and it was very probable that if that cotton were in the market to day, it would sell at from 1s. 6d. to 2s. per pound. It had often been insisted that price would bring cotton. Now, if price would bring cotton, would the cultivator desire to obtain a larger margin of profit on the transaction than the difference between three farthings per pound and 6½d., as in the first instance alluded to, or, as at present, between ¾d. and 1s. 6d. to 2s., ranging as these prices did from eight to twenty and thirty times the original cost of the article. Supposing, further, as they had a right to do, that price would bring an abundance of cotton, how did it happen that India was not sending it, seeing that it could not be said that the price was not sufficiently tempting? There must be something wrong—an interruption of commerce would be found existing somewhere. Some eulogium had, during the evening, been passed upon the Government of India, and upon the alleged impossibility of improving the tenure of land. All this appeared to those who had never been in India somewhat difficult to understand. If there was a good title to the tenure of the land, and if the investment of capital was safe in a country which could produce cotton at three-farthings per pound, which could command so high a price as he had spoken of, upon whom did it rest to facilitate those commercial operations which now impeded our supply? The Indian Council were responsible for the government of that country, and therefore we had a right to receive some explanation so as to know how it could happen that, with an industrious and docile people, with every advantage of climate and soil, we could not now obtain cotton at Bombay of as good quality and as cheaply as it could be obtained at New Orleans. If the advantages of price and quality were equal, no one would hesitate to enter into the trade; it would be extended very largely, and in that way this country would eventually convey to India a large portion of that £40,000,000 a year which hitherto had usually found its way to the Southern States of America. Surely everyone would admit how very important it was to the poor people of India that they should share more largely than they did at present in that enormous amount of money now at the command of the mother country to distribute. They found that the people of Egypt, the people of Italy, of Turkey, and many other parts of the world, had been sagacious enough to discover the advantages to be obtained, but, unaccountable as it might appear, they had thus far been unable to discover that India had made any considerable efforts in that direction. How did it happen that the affairs of India were so ill managed, and that there should be so obvious an indifference to the attraction of £40,000,000 a year? The subject of cotton culture had been again and again brought under discussion, and the obstacle mostly dwelt upon was the tenure of land, and the uncertainties necessarily involved. They all knew that in this country they had various forms of tenure, such as freehold, copyhold, and leasehold, but the security being admitted, the cultivation of the soil went on nevertheless. There was, however, one description of tenure which people in this country were very chary about, and that was a tenure from year to year as tenant at will, and if he was not mistaken, the tenure of land in India was upon a principle equally as bad, and the cultivator was exceedingly impatient to have it improved. Some years ago Lord Stanley issued a despatch to the effect that the waste lands should be sold and a permanent tenure established by purchase. The sale of the lands and the ownership of a proprietary had been spoken of, not only as an attraction to the cultivator, but as the most eligible means whereby the manufacturers of this country could become more nearly independent of other countries for the production of cotton. Lord Canning put in motion his form of resolutions for carrying out Lord Stanley's despatch; sales of land were made, and the people rejoiced in the announcement of a measure so well calculated for bringing about the more extended cultivation, not only of cotton, but of all the productions of India. A proceeding so salutary did not find favour at head-quarters, and the Council of India, with Sir Charles Wood at their head, had, in effect, cancelled that order, and, according to all they heard from India upon the subject, it might be centuries before Sir Charles Wood and his Council had dispossessed the kings of the forest, and other wild beasts of the waste lands, which the people were so anxious to bring into cultivation. Another obstacle to progress was the absence of a proper contract law. It was admitted that British capital and enterprise were indispensable to the progress of India, but if they had neither a sound tenure of land, nor an efficient means of collecting debts, it was enough to make discreet people very chary of investing their money, and he thought no one who had considered the subject would say that India at the present time possessed one or other of these conditions of safety for investment. If capital were deemed safe in India, it would be embarked there, and then they would not find as they now did, so many companies springing up and undertaking the growth of cotton in other parts of the world. There had been two or three attempts made to carry a contract law in the local legislature of India, but those attempts had been overruled by Sir Charles Wood, on grounds which he (Mr. Ashworth) did not understand. Indeed, it would appear that the proceedings of Sir Charles Wood in obstructing the contract law had been deemed to require the aid of great names by way of endorsement, and within the last week or two 150 signatures had been obtained, of bishops, lawyers, military men, and old Indian officials, in token of approval of his policy; but it was a singular fact, that out of the 150 there was the name of only one merchant; and the affairs of money belonging to the merchant rather than to the other classes, he deemed such a voucher of no value whatever. The *Times* newspaper, which seldom was so naughty as to abuse the Indian Government, could not refrain from inflicting some damage upon the extraordinary document to which he had just referred, and in referring to the condition of the Indian cultivator it had reasoned as follows:—"It is miserable to be poor; but that misery is doubled if a harsh government purposely deprives a poor man of that support which is indispensable to the industry by which he lives." Now, they all knew that the people of India were poor; they knew that of necessity they were great money borrowers; and so long as they were governed in a way which hindered the operations of the lender in making advances to the borrower, they had no reason to suppose that cotton cultivation would be carried out in the enlightened and effective manner which had been proposed and successfully adopted by Mr. Shaw.

Mr. F. Bashford said he had resided in the interior of India for many years, and could testify to much of the Province of Bengal being well suited for the growth of cotton. He had seen Sea Island grown there; and the muslins of Dacca, all from locally grown indigenous sorts, were proof that other cotton of good quality could also be grown in that province. The production had of late years been extremely curtailed, and the consumption entirely confined to local domestic purposes. All that was now necessary to extend the cultivation was a paying price to the ryots superior to what other crops yielded them; such a price was now ruling, and should it exist up to next sowing season, there would be from India generally, in the following year, far more than double the quantity they had yet had. The fear, however, was that this increased quantity would not be of better quality; more probably inferior. Extremely high prices generally engendered a greater desire for quantity, and careless preparation was the consequence. To remedy this evil, Manchester merchants must send out proper machinery to clean the cotton, and a sufficient number of experienced men to teach the natives how to use this improved machinery, and practically show them the increased value of the fibre so prepared. He was quite sure that if this were done, in one year every desire of the manufacturer would be realised. The natives were as anxious for profit as any class of men in the world; they were as easily taught, and, when their own interest was at stake, as tractable and reasonable as our own agriculturists. If they were practically shown that a greater profit was to be made by a superior article, and the mode of preparing it, there would be nothing wanting on their part. Government assistance was not necessary, except in the distribution of seed, which the magistrates and collectors would do better than private individuals, from having establishments in every village; this should be given them free of cost. The interference of middle men was the great bane of all India; they fed upon the vitals of the ryots, and effectually prevented any improvement in their position. Poverty was the unfortunate normal state of almost all the agricultural class in India, and, in consequence, they were too frequently compelled to avail themselves of these men for advances, and if a fair rate of interest was all they asked for, there would be nothing objectionable; but the practice was to advance about one-fourth of the expected value of the whole crop, and an undertaking was exacted that the entire produce should be at the disposal of the middle man, at a certain fixed rate below the market value. This gave him a certain interest or profit upon a sum frequently several times the amount of his advance; he had no risk of a falling market, and the interest the ryot should have for his own capital was all taken away. The ryot, from taking this sometimes very trifling advance, was deprived of all control of his property, and the middle man grew rich while the ryot rarely advanced his position. Was it to render legal such acts as these that a more stringent contract law was desired? The natives were quite as willing to perform their parts in all honest contracts as a similar body of Europeans would be. Through a period of twenty years, he (Mr. Bashford) could scarcely remember an engagement not being fulfilled as far as practicable, or a reasonable contract broken. Let the natives be treated fairly, and they would do their part of the bargain; but if they were expected to give cotton or indigo or silk at a less price than it could be grown for, resistance must be anticipated. Labour had become scarce and dear in India, and rents had generally advanced, so that cotton could now scarcely be grown at 5d. per lb. unless the quality was improved, which he hoped the Manchester men would encourage by sending out men and machinery. He might instance an analogous article—silk. In 1837, when he first landed in Bengal, this staple was of the lowest character, but in 1858, when he left India, it was second in quality only to Italian, a general improvement in value and usefulness of fully 20 per cent. having taken place. This improvement was brought about by instructing the natives, and he felt sure cotton would benefit by the same simple process. The ryots of Bengal had a great hardship to contend with in the peculiar nature of their rent-charge, and what he (Mr. Bashford) considered a great drawback to the delopment of the natural capabilities of the soil of India—the sliding scale of rent. The ryot would take his holding at a certain rate; if he grew rice or oil-seeds, this was not altered; but if he improved the ground and made it suitable for mulberry, sugar, tobacco. cotton, &c., he became liable to be called upon for an increased rent, possibly absorbing the whole of his expected gains from the new crop, and discouraging future improvements.

The Chairman said it was now his very agreeable duty to propose that the hearty thanks of the meeting be accorded to Mr. Cheetham for the very valuable contribution to cotton literature and cotton history with which he had favoured them. He would say he had seldom heard a paper more replete with interesting facts. He had had the pleasure of Mr. Cheetham's friendship and acquaintance for many years, and he thought the commercial community was very much indebted to him. Mr. Cheetham occupied the position of a member of Parliament for South Lancashire for a considerable period, and he sincerely wished they had the benefit of his services at the present time. He had also filled the position of chairman of the Cotton Supply Association of Manchester, and his feelings and services had always been identified with progress. Touching the subject under discussion, he would observe incidentally, that he thought Mr. Leone Levi was not correct in saying that the scarcity of labour was a difficulty in the way of growing cotton in our colonies. The truth was, all the cotton which was consumed in Great Britain could be produced by the labour of less than a million of people, and such a number of labourers could easily be introduced into Australia. Such a number could even be concentrated upon a comparatively small spot in India, or in the British West Indies, or in Natal. There was no difficulty but the want of will and the lack of effort. He would observe with regard to the distinguished gentleman, Sir John Lawrence, who had recently addressed them, that he was sure this meeting would regard him as one of the beneficent rulers of India—a gentleman who, by his conquests, had added to the lustre of the British arms, and by his administrative ability had done honour to our rule in that country. We were all proud of our great Eastern dependency, but in the possession of British India we should like to see our commerce extended, and the country thoroughly established. We should also like to see the restrictive system, which he feared prevailed there, abolished. In a country of such enormous extent as India, with its fertile valleys and rich plains watered by mighty rivers, was it credible that, inasmuch as a piece of ground less than some of our English counties would suffice to grow all the cotton we required, that in all that splendid territory such a spot could not be found? Did not some blame for neglect rest with the authorities, in not having taken such steps as would have rescued England at this juncture from the distress that had been inflicted upon one of the most industrious communities upon the face of the earth? They were imperilling the position of nearly three millions of people in the manufacturing districts. To come to the rescue of these three millions would be a work of great merit. He had the most thorough and profound conviction that India was capable of not only producing the quantity, but also the quality of cotton they wanted. He entirely endorsed the opinion of Mr. Shaw on that point; and he would observe, with reference to the statement of his friend Mr. Cheetham, concerning Sir William Denison's opinion of cotton growing in India, that he had had the satisfaction of receiving from Sir W. Denison, a few months ago, a letter, in which he said that India was capable of supplying the great bulk of the cotton most used in England—that was the middling quality of New Orleans. That was all they asked for; and seeing there were many gentlemen present connected with India, he hoped that such facts as had been stated by his friend Mr. Ashworth, the President of the Chamber of Commerce of Manchester, and other gentlemen, would have due consideration. He was not without hope, but at the same time he was convinced that, unless an effort was made, they should continue to be oppressed with the state of destitution which unhappily now prevailed. The Chairman concluded by proposing a cordial vote of thanks to Mr. Cheetham for his valuable paper.

The vote of thanks having been passed,

Mr. Cheetham, in acknowledging the compliment, observed that he had listened with much interest to the observations of Sir John Lawrence, for whose qualifications and experience as an Indian statesman he had the highest respect. But he would not conceal the fact that between the government of India, as now constituted, and the manufacturers of Lancashire, there existed a wide difference of opinion, and on the part of the latter a feeling of deep discontent. It appeared to him that much of the leaven of official bigotry and opposition to all improvement—the distinguishing feature of the old East India Company—yet remained in official quarters; and sure he was that, so long as that spirit presided over the councils of India, so long would progress be repressed, and all hope of realising the results of an enlightened policy of administration must be abandoned.

Professor Levi placed on the table for inspection several specimens of cotton of various kinds, principally Italian, and kindly lent various statistical diagrams to aid in the elucidation of the subject.

The Secretary announced that on Wednesday evening next, the 4th March, a paper by Mr. George R. Burnell, "On the Influence of certain Social Institutions on the Progress of Art in this and in Foreign Countries," would be read.

PRIZES FOR ESSAYS IN THE COLONIES.

The following advertisement has been published:—

"The Operative and Labouring Classes of the United Kingdom are invited to Compete for the Prizes offered below for the Three best Essays on the following subjects:—

"'The advantages accruing to the nation, collectively and individually, from the possession of its various colonies, considered in economical, political, and moral points of view.'

"For the best Essay	£30.
"For the second best.........	£15.
"For the third best	£10.

"Umpires:—

"Sir Henry Young, C.B., late Governor of Tasmania.
"The Archdeacon of Middlesex.
"Stephen Walcott, Esq., one of H.M. Emigration Commissioners.

"The Essays are to be sent in on or before Saturday, May 30, 1863, to the care of the Rev. John Philip Gell, Notting-hill, London, W., who will distribute the prizes, and who must be satisfied that the writers of the successful Essays belong to the labouring or operative classes."

ASSOCIATION FOR THE PREVENTION OF STEAM BOILER EXPLOSIONS, MANCHESTER.

A special meeting of the Executive Committee of this Association was held at the Offices, 41, Corporation-street, Manchester, on Tuesday, January 20th, Hugh Mason, Esq., Vice-President, in the chair; in order to take into consideration a retrospect of the transactions of the Association during the past year of 1862; when Mr. L. E. Fletcher, chief engineer, presented his annual report relating to matters of an engineering character, from which the following facts are extracted:—

It appears that all the boilers under the care of the Association have received their full complement of examinations during the past year, including an annual visit of inspection from the chief engineer; while the report goes on to say, "820 of these boilers have been examined 'Thoroughly,' that is, when empty and cold, when the inspector not only gets inside them, but also goes up the flues, so as to ascertain the condition of the plates and seams of rivets throughout. The number of these 'Thorough' examinations this year is higher than it has been in any preceding one since the commencement of the Association, and is nearly double that of last year." In consequence of this increased number of "Thorough" examinations, it was stated that a larger number of defects than usual had been revealed, and which would otherwise have been unknown; an additional illustration of the importance of these "Thorough" examinations. "The defects discovered in boilers are mainly of two classes, one relating to their construction and the other to their condition. Under the first head, namely, that of construction, 196 recommendations had been made, which are as follows:—

"In 153 boilers the internal flue tubes have been recommended to be strengthened by hooping.

"In 18 boilers the shells have been recommended to be strengthened at the steam domes by stays of angle iron, &c.

"In 9 boilers the shells have been recommended to be strengthened at the ends.

"In 16 boilers the load on the safety valves has been recommended to be reduced."

Under the second head, namely, that of condition, 85 defects had been discovered, all of which were considered dangerous; they are as follows:—"Fracture of plates and angle irons, 13; blistered plates, 1; furnaces out of shape, 12; corrosion, 37; defective safety valves, 5; defective water gauges, 9; defective blow-out apparatus, 7;" others, not actually dangerous, but still unsatisfactory, were then given, which need not here be repeated. The report then went into a detailed consideration of the defects discovered under each of the above heads; some of the remarks on corrosion may be given.

"Corrosion is found to be going on in all boilers more or less, and it will be seen that the greatest number of dangerous defects in the preceding table are to be found under this head.

"In one case a boiler set upon a mid-feather wall 15 inches thick, had a channel eaten right along it about 8 inches wide, which ran down the centre of the seating, while the plates at the edges of the brickwork appeared quite sound, and the danger consequently passed for some time unsuspected. In a second instance, with a mid-feather two feet wide, the plate was found to be eaten almost through from nearly one end of the boiler to the other—while in a third, where lime had been allowed to come in contact with the boiler at the mid-feather, the plate was completely pulverised, and could be carried away in handfuls. In a fourth case, a vertical tubular boiler had been placed close to a wall, one part being in actual contact. Damp in the brickwork set up corrosive action in the plate, which being concealed by the position, went on undetected until the metal was completely eaten through, and a piece blown out by the pressure of the steam. The original plating of the boiler was thick, the pressure low, and the corrosive action local, only affecting a surface of about 12 inches square, so that the rent did not extend."

"Examples of corrosion might be multiplied indefinitely; enough, however, has been said to show the importance of having all parts of the boiler accessible to examination, the flues sufficiently capacious, and the seatings as narrow as possible, and also of having the brickwork removed occasionally, at all events in places, so as to ascertain the condition of the plates, since to conclude that the parts concealed are in the same condition as those in view has been found in practice to be fallacious."

Under the head of Explosions it was stated:—"It is to be regretted that no means exist of ascertaining the whole number of steam boiler explosions that occur throughout the United Kingdom, and there can be no doubt that many are recorded at all. There are known, however, to have occurred during the last year, no less than 31 explosions, from which at least 87 persons have been killed, and 88 injured. Of the number of lives lost by some of the above, no account could be obtained; while from one of them as many as 29 persons were killed and 12 injured; from a second, 12 were killed and 24 injured; and from a third, 6 were killed and 8 injured."

"The following list gives the description of boiler to which the explosions have occurred, with the number of each class, as well as of the persons killed and injured:—1 Haystack Boilers—12 persons killed and 5 others injured; 6 plain cylindrical egg-ended boilers—6 persons killed and 6 others injured; 3 iron work boilers—47 persons killed and 44 others injured; 3 plain single-flued Cornish boilers—2 persons killed and 2 others injured; 2 plain double-flued Lancashire boilers—4 persons killed; 3 locomotive boilers—4 persons killed and 2 others injured; 1 agricultural boiler of tubular portable construction—4 persons killed and 4 others injured; 1 kitchen-range boiler—1 person killed. Also 8 other boilers, of the construction of which no reliable information could be obtained, but from the explosion of which 27 persons were killed and 22 others injured."

An analysis of the causes of explosion then followed, the summary of which is as follows:—"Of 31 explosions which have happened during the year 1862, 11 occurred to externally fired boilers, from failure of the plates exposed to the action of the fire; 3 resulted from internal corrosion, and 3 from external; in addition to which, 4 were due to improper original construction, one to shortness of water, and another to accumulated pressure through want of a safety-valve; while 7 occurred at a distance which precluded a personal investigation of their causes, at the same time that no reliable information could be obtained with regard to them."

It was also stated that since the foundation of the Association eight years ago, "It has been found, upon limited inquiry only, that throughout the United Kingdom no less than 213 explosions have occurred, which have been attended with the loss of 472 lives, in addition to serious injury to 512 persons, and considerable damage to property."

Home Correspondence.

THE SUBMARINE TELEGRAPH.

Sir,—I ask permission to say a few words in your *Journal* on the subject of "Marine Telegraphy." The immediate point upon which I propose to write involves the difficulties in submerging and laying of cable. No doubt these difficulties may, as observed by Mr. Webster in his able paper on this subject, be "reduced to certainty" by experiment; but when the various characters of sea-bottom are taken into consideration, it is to be feared that experiment must necessarily be of a very multifarious and experimental character.

Now, as I understand Mr. Webster, he gives the following as rules incidental to the submerging and laying down of a cable, viz.:—

1. That a cable cannot at first be laid down so as to form a straight and regular line.
2. That curves and flexures of various and opposite characters are formed which are dependent on the circumstances of submerging and laying down.

These, no doubt, are what I may call the "incidents" attending a cable on its reaching a sea-bottom. Mr. Webster gives several illustrations in support of his views, and which are tersely and forcibly stated by this gentleman. Thus, Mr. Webster says:—"If the cable sinks faster than the speed of the ship, the concavity of the curve will be upwards or towards the surface of the water, and the convexity of the curve towards the bottom; but the cable in attaining this position will have presented a curve having a contrary flexure, in the language of geometricians, which, in a cable of great weight and thickness, may lead to serious inconveniences."

The substantial question is, Is there any mode of avoiding these curves and flexures? We may pass by the characteristics of such curves and flexures as the mere circumstances of a common difficulty. A rope is always liable to coil, as is well-known, unless it be kept in a state of tension. Now, what I suggest is, that the speed of the vessel and the submerging of the cable should be so arranged as to keep the cable in a state of tension. I beg leave respectfully to press this as a rule which, I think, will work out and eventually overcome the difficulties in question, and that without any auxiliary appliances. If the rule I suggest be adequate, experiments in a short line of water will, I doubt not, give results which will soon furnish a table by which the submerging process can be regulated. It will be obvious that this process can only be carried on in calm weather. The consequences of a "heavy sea" are, as it seems to me, beyond all control, except so far as brought within this rule of tension. That is a branch of the subject with regard to which I have no suggestion to offer, and I doubt whether it be within human contrivance to overcome such a difficulty. After all, modern science is only the application of old rules, since, as Solomon truly says, "There is nothing new under the sun." I am, &c.,

J. CULVERHOUSE.

3, Compton-street, Ball's-pond, Feb. 13, 1863.

A NEW EDUCATIONAL MOVEMENT.

Sir,—Will you allow me to invite the attention of your readers to a movement which I have had the honour of originating at the College of Preceptors, in favour of applying to Parliament for a Scholastic Registration Act, and which is receiving very general and influential support? It is proposed that all schoolmasters and teachers now engaged in the profession, of whatever class, be registered; but that after some future date to be specified, only persons holding degrees, recognised diplomas, or Government certificates, be registered, without which no person be entitled to prosecute any claim for scholastic instruction in the courts of law. The objects desired are:—To raise the scholastic professsion, by the ultimate exclusion of incompetent persons; to place the education of youth in the hands of duly educated men; to encourage the study of education as a science; to enable the public to distinguish between qualified and unqualified schoolmasters; and to give the profession a legally recognised position. A Council, consisting of persons chosen by the Universities, by the Committee of Council on Education, by the College of Preceptors, and by other Educational Institutions, with others nominated by her Majesty's Privy Council, would carry into execution the powers of the Act; and no man's name could be struck off the register, when once entered, unless some legal charge could be brought against him. Qualified educators would be registered irrespectively of their religious opinions or demonstrations. The proposed Act would not interfere in the least with the liberty of the schoolmaster, any more than the Medical Act does with that of the surgeon; each would be as free to arrange his own affairs as at present. I am, &c., B. R.

Aldershot, February 4th, 1863.

MEETINGS FOR THE ENSUING WEEK.

MON. ...Entomological, 7.
Royal Inst., 2. General Monthly Meeting.
Medical, 8½. General Meeting for Election of Officers and Council. Dr. Routh, "On some Points in the Treatment of *Prolapsus Uteri.*"
Asiatic, 3.
Medical and Chirurgical, 8. Annual Meeting.
Royal United Service Inst., 8½. Capt. G. B. V. Arbuckle, "The Application of Iron to Forts and Ships."
TUES. ...Civil Engineers, 8. 1. The Rev. J. C. Clutterbuck, M.A., "The Perennial and Flood Waters of the Upper Thames."
Pathological, 8.
Photographic, 8.
Ethnological, 8.
Royal Inst., 3. Prof. Marshall, "On Animal Mechanics."
WED. ...Society of Arts, 8. Mr. G. R. Burnell, "On the Influence of certain Social Institutions on the Progress of Art in this and Foreign Countries."
Geological, 8.
Pharmaceutical, 8.
THURS...Royal, 8½.
Antiquarian, 8½.
Linnæan, 8. 1. Mr. Frederick Smith, "On the Geographical Distribution of the Aculeate *Hymenoptera* of the Eastern Archipelago." 2. Mr. Andrew Murray, "Description of two new Conifers from the Rocky Mountains." 3. Dr. John Harley, "On the Parasitism of the Mistletoe (*Viscum album*)."
Chemical, 8. Mr. J. B. Lawes, "On the Assimilation of Nitrogen by Plants."
Royal Inst., 3. Dr. E. Frankland, "On Chemical Affinity."
FRI.......Philological, 8.
R. Society Club, 6.
Royal Inst., 8. Dr. Miller, "On the Most Recent Spectrum Discoveries."
Archæological Inst., 4.
SAT.......Med., 5. Anniversary Oration, by Dr. Habershon.
Royal Inst., 3. Professor Max Muller, "On the Science of Language."

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Delivered during the Vacation 1862.

Par. Numb.
429. Charges on Foreign Trade (Customs' Act, 1860)—Report.
450. Maynooth College—Return.
444 (1). Standing Orders Revision—Report and Evidence.
495. Registry of Deeds (Ireland)—Returns.
492. Roman Catholic Chaplains (Ireland)—Return.
496. Treasure Trove—Return.
499. Navy (Victualling Department)—Return.
370. Inland Revenue and Customs' Establishments—Report.
43 (7). Trade and Navigation Accounts (31st July, 1862).
401. Prosecution Expenses—Report and Evidence.
410. Population, Houses, &c.—Return.
472. Youghal Union—Return.
483. Great Southern and Western and Limerick and Castle Connell Railways—Lords' Paper.
497. Beer—Return.
502. Poor Relief (Lancashire, &c.)—Return.
504. Hainault and Epping Forests—Return.
505. Local Government Act (1858)—Fourth Report.
509. Lunatics—Return.
270. Pilotage— Abstract of Returns.
351. County Court Committals—Abstract of Returns.
390. Sugar Duties—Report.
418. Hydrographical Surveys—Return.
421. Sydney Branch Mint—Report and Evidence.
471. Infirmaries and Fever Hospitals (Ireland)—Return.
487. Gas (Metropolis) Act—Accounts.
398. Railways—Return.
411. Weights and Measures—Report and Evidence.
455. Newcastle-upon-Tyne Trinity House—Return,
511. Ramsgate Harbour—Return.
307 (A 3). Poor Rates and Pauperism—Return (A).
475. Colonial Governors, &c.—Return.
502 (1). Poor Relief (Lancashire, &c.)—Return.
416. Friendly Societies—Report of the Registrar.
486. Injury from Noxious Vapours—Lords' Report.
491. Burial Act—Returns.
43 (8). Trade and Navigation Account (31st August, 1862).
470. Ecclesiastical Commission—Report.
478. Public Income and Expenditure—Return.
503. Havens, Mr. W. R.—Copy of Correspondence.
508. Ecclesiastical Commission—Return.
325. County Treasurers—Abstract of Accounts.
307 (A 4). Poor Rates and Pauperism—Return (A).
453. East India (Godavery River)—Return.
493. Tobacco (Liverpool)—Return.
502 (2). Poor Relief (Lancashire, &c.)—Return.
467. Public Accounts—Third Report from Committee.
199. Health of the Royal Navy—Statistical Abstract.
43 (9). Trade and Navigation Accounts (30th September, 1862.
365. Woods, Forests, and Land Revenues—Fortieth Report.
307 (A 5). Poor Rates and Pauperism—Return (A).
489. Electric Light—Mr. Faraday's Report.
498. Newspapers, &c.—Return.
457. Harbours and Passing Tolls, &c., Act—Return.
448. Ordnance—Report from Committee.
441. Railway, &c., Bills—Return.
470. Ecclesiastical Commission—Report, Evidence, &c.
185. Grand Jury Presentments (Ireland)—Abstract of Accounts.
506. Chelsea Bridge—Return.
220, 414, and 467. Public Accounts—First, Second, and Third Reports and Evidence.
477. Civil Service Estimates—Return.
507. Navy (Dockyards)—Returns.
502 (3). Poor Relief (Lancashire, &c.)—Return.
468. Poor Relief—Third Report from Committee.
501. Cost of Relief (Lancashire, &c.)—Return.
43 (10). Trade and Navigation Accounts (31st October, 1862).
479. Supply—Return.
307 (A 6). Poor Rates and Pauperism—Return (A).
502 (4). Poor Relief (Lancashire, &c.)—Return.
370 (1). Inland Revenue and Customs' Establishments—Index to Reports.
470 (1). Ecclesiastical Commission—Index to Reports.
43 (11). Trade and Navigation Accounts (30th November, 1862).
490. Westminster Bridge—Return.
469. Sewage of Towns—Second Report from the Select Committee.
307 (A 7). Poor Rates and Pauperism—Return (A).
484. Savings' Banks—Return.
474. Customs' Tariffs (Colonies)—Return.
500. Private Bills—Return.
510. Education of Pauper Children—Return.
307 (A 8). Poor Rates and Pauperism—Return (A).
250. Bills—Benchers' Jurisdiction and Authority.
254. „ Church Rates Commutation (No. 2).
North America—Further Correspondenee (Part 12).
China (Rebellion in)—Further Papers.
Naples (Treatment of Political Prisoners and Arrest of Mr. Bishop)—Papers.
Inland Revenue—Sixth Report.
Barrack Works—Report of a Committee.
New Zealand—Papers.
Poor Law Board—Fourteenth Report.
Colonial Possessions (Part II.)—Reports.
Thames Embankment (Surrey Side)—Report
Census of England and Wales (1861)—Population Tables, vol. I.
Volunteer Force in Great Britain—Report of Commissioners.
Sewage of Towns—Second Report of the Commission.
Dockyards and Steam Factories (Cost of Manufacturing Articles)—Balance Sheets.
Colonial and other Possessions of the United Kingdom (Part 7)—Statistical Tables.
Trade and Navigation of the United Kingdom (1861)—Annual Statement.
Miscellaneous Statistics of the United Kingdom (Part 4).

SESSION 1861.

324 (C 1). Poor Rates and Pauperism—Return (C.)

Delivered on 7th and 9th February, 1863.

1. Public Income and Expenditure—Accounts.
6. Metropolitan Board of Works (Financial Transactions)—Return.
1. Bill—Salmon Fisheries (Ireland).
Prince of Wales's Marriage—Treaty with the King of Denmark.
Belgium (Joint Stock Companies)—Convention.
Belgium (Commerce and Navigation)—Treaty.
Poor Relief (Scotland)—Seventeenth Report of the Board of Supervision.
Greece—Correspondence respecting the Revolution.
Rome—Correspondence relative to the Affairs of.
North America—Despatch respecting the Civil War.

Delivered on 10th February, 1863.

2. Bills—Church Rates Abolition.
4. ,, Qualification for Offices Abolition.
5. ,, Judgments, &c.—Law Amendment.
7. ,, Drainage of Land (Ireland).

Delivered on 11th February, 1863.

5. Public Income and Expenditure (1860-61 & 1861-62)—Account.
23. General Committee of Elections—Mr. Speaker's Warrant.
Italy (Brigandage)—Papers.
Japan—Correspondence respecting affairs in.

Session 1862.

494. Prisoners—Return.

Delivered on 12th February, 1863.

7. Gold Coinage—Return.
9. Irish Reproductive Loan Fund—Account.
17. Flogging (Army and Militia)—Return.
18. Militia (Number of Months Embodied)—Return.
22. Charitable Funds—Return.
20. Police (Counties and Boroughs)—Reports of Inspectors.
3. Bills—Endowed Schools.
8. ,, Corrupt Practices at Elections.
10. ,, Benchers' Jurisdiction and Authority.
11. ,, Affirmations.
12. ,, Church Rates Redemption.
13. ,, Illegitimate Children (Ireland).

Session 1862.

Miscellaneous Statistics of the United Kingdom—Part IV. (corrected Pages).

Delivered on 13th February, 1863.

13. Army (General Officers)—Return.

Session 1862.

502 (v.) Poor Relief (Lancashire, &c.)—Return.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, February 13th*, 1863.]

235. C. F. Ash, 20 and 21, Upper Thames-street—Imp. in the manufacture of cornices, joints, and laths of bedsteads and other articles of furniture.
237. W. Rollason, jun., Birmingham—Imp. in the manufacture of metallic boxes.
239. J. Edmondson, Frizinghall, near Bradford, and T. Ingram, Bradford—Imp. in looms and apparatus for weaving.
240. T. Gordon, 41, King-street, Soho—An improved method of, and apparatus for, damping and affixing postage stamps to letters.
241. D. E. Hughes, Gresham-house, Old Broad-street—Imp. in means or apparatus for effecting telegraphic communications.

Dated 28th January, 1863.

243. H. B. Barlow, Manchester—Imp. in preserving timber, and in apparatus employed therein. (A com.)
245. T. Parkinson, Bury—Imp. in carding engines.
247. E. F. Prentiss and J. C. Sellars, Birkenhead—Imp. in treating rock oil, petroleum, paraffin oil, coal oil, and paraffin and other like mineral oils, and products therefrom.
249. H. O. Cook and E. G. Terrey, 12, Lower Clifton-street, Finsbury—Imp. in propelling ships and vessels, and in apparatus employed therein.
251. R. Ward, Newcastle-on-Tyne—Imp. in locking-up or fastening forms of type or other printing surfaces.
253. J. Platt, 10, Charlotte-street—Imp. in rotatory engine.
257. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in the manufacture of braid, and in machinery or apparatus employed therein. (A com.)
259. E. G. Muntz, Birmingham—Imp. in securing axles and axle boxes.

Dated 29th January, 1863.

276. F. G. Stuber, 1, St. James's-road, Brixton—Imp. in the construction of air-tight boxes, cases, cupboards, and similar vessels.

Dated 30th January, 1863.

278. W. E. Gedge, 11, Wellington-street, Strand—Improved apparatus for cleansing chimneys and other flues. (A com.)
280. J. Cocker, Liverpool—An improved turnstile especially applicable to omnibuses and other vehicles to show or indicate the number of passengers that have been carried.
282. W. E. Newton, 66, Chancery-lane—Imp. in the couplings for railway carriages. (A com.)

Dated 31st January, 1863.

284. M. Smith, Heywood, Lancashire—Certain imp. in looms for weaving.
286. T. Bennett, Worcester—Improved arrangements for obtaining pictorial back-grounds, fore-grounds, and perspectives, when taking photographic portraits or sun pictures.
288. F. Tolhausen, 17, Faubourg Montmartre, Paris—New or improved apparatus for cleaning the beams of mules and spinning frames, collecting the dust and waste thereof, and also for cleaning the flooring underdeath the mule carriages. (A com.)

Dated 2nd February, 1863.

292. F. G. Grice, West Bromwich—Imp. in machinery for the manufacture of bolts, spikes, rivets, and screw blanks.
296. W. C. Barnes, Enfield—Imp. in means or apparatus for shaping, rolling, or compressing metal.

Dated 3rd February, 1863.

300. C. Smithies and G. L. Smithies, Manchester—Certain imp. in preparing and bleaching "Rheea," and other fibrous materials and fibres, which improvements are also applicable to bleaching yarns or piece goods.
302. G. Holcroft, Manchester—Imp. in preparing cotton for the operations of spinning and weaving.
304. J. Fletcher, Droylesden, near Manchester, and H. Bower, Halifax—An improved injector or apparatus for feeding boilers with water.
306. T. L. Jacobs, Burton-on-Trent, Staffordshire—An improved mode of and apparatus for cleaning casks.
308. W. E. Newton, 66, Chancery-lane—Imp. in reflectors. (A com.)

Dated 4th February, 1863.

310. J. Mellor, Manchester—Imp. in apparatus to be used in distilling, subliming, and drying.
312. T. Bradford, Manchester—Imp. in machinery or apparatus for washing, wringing, and mangling clothes or other textile fabrics.
314. G. T. Bousfield, Loughborough-park, Brixton—Imp. in postage revenue, and other stamps, and in apparatus for post marking and cancelling postage and other stamps. (A com.)

Dated 5th February, 1863.

324. J. Gill and J. Parkin, Far Headingley, near Leeds—Imp. in apparatus for polishing yarn, twine, thread, and other similar materials.
326. H. Dircks, Blackheath, Kent, and J. H. Pepper, 309, Regent-street—Imp. in apparatus to be used in the exhibition of dramatic and other like performance.

[*From Gazette, February 20th*, 1863.]

Dated 24th October, 1862.

2868. J. Wright, 12, Copthall-court, Throgmorton-street—Imp. in the construction of seamless stays. (A com.)

Dated 25th November, 1862.

3162. W. B. Caulfield, 30, Queen-street—A new kind of porous stems for tobacco pipes.

Dated 30th December, 1862.

3479. W. Clark, 53, Chancery-lane—Imp. in governing apparatus. (A com.)

Dated 9th January, 1863.

72. C. Worssam, Commercial Wharf, Kingsland-road—An improved lithographic press.

Dated 21st January, 1863.

177. J. W. Meears, 4, Whistler-court, Cannon-street—A new or improved method for making sash frames and sashes, and suspending the same by atmospheric or gas pressure.

Dated 26th January, 1863.

227. J. B. Fell, Sparkbridge, near Newton in Cartmel, Lancashire—Imp. in working railway engines and carriages on steep inclines.

Dated 28th January, 1863.

255. S. W. Francis, Gray's-inn-road—Imp. in revolving shutters.
261. B. A. Bromwich, Charterhouse-square—An improved mode of obtaining and applying motive power.

Dated 29th January, 1863.

263. T. A. Weston, Birmingham—A new or improved coupling and break for transmitting or regulating or arresting motion.
264. J. B. E. Louit, sen., Bordeaux—Imp. in glasses termed chimneys, used for gas or other lights.
267. J. Pouncy, Dorchester—Imp. in obtaining, transferring, and printing from photographic pictures or images, also in preparing materials for the same.
269. J. Nadal, Brookes Market, Brook-street, Holborn—Imp. in fountains.
271. C. H. G. Williams, Rumford-street, Glasgow—Imp. in the manfacture of red colouring matters.
273. G. Blake, Trowbridge, Wiltshire—Imp. in apparatus for heating and warming.
275. J. Sainty, Burnham, Norfolk—Imp. in feeding troughs for sheep and other cattle.

Dated 30th January, 1863.

279. W. E. Gedge, 11, Wellington-street, Strand—Imp. in cones or forms for moulding refined sugar. (A com.)

281. N. P. C. Lloyd, 1, Liverpool-street—An improved atmospheric engine, applicable to purposes to which steam, horse, wind, and water power is applied.

Dated 31st January, 1863.

287. J. Grossmith, 85, Newgate-street—An improved mode of producing the aura electric gas.

289. W. Drummond, Bank of England—Imp. in apparatus for stopping the supply of gas to burners when the light is put out.

290. W. A. Lyttle, Andover lodge, Albion-road, Hammersmith—Imp. connected with cigars and other tobacco smoking appliances.

291. E B. Wilson, Parliament-street, Westminster—Imp. in supplying air, gases, steam, or fluids to iron and other furnaces, and to engines and vessels requiring such supply, and in the apparatus employed therein.

Dated 2nd February, 1863.

293. E. H. Massey, 15, Pine-grove, Crown-street, Liverpool—Improved preparation or compositions for coating and colouring the walls, ceilings, and other parts of buildings.

295. A. Forbes, Canal-terrace, Aberdeen—Imp. in means or apparatus for soldering together parts of vessels formed of tin or tinned plate.

297. R. H. Frith, Leinster-road, Rathmines, Dublin—Imp. in the manufacture of paper.

299. W. Clark, Qudrant-road, Highbury New-park—Imp. in armour plated and other ships.

Dated 3rd February, 1863.

301. T. Raworth, Leicester—Imp. in looms for weaving ribbons, elastic webbing, and other narrow fabrics.

303. S. Oddy and E. Oldfield, Adelphi Iron Works, Salford—Certain imp. in carding engines.

305. A. T. Blakely, Parliament-street, Westminster, and J. Vavasseur, Southwark—Imp. in projectiles for ordnance.

307. W. G. Valentin, Oxford-street, and F. Levick, Blaina, Monmouthshire—Imp. in generating combustible gases, and in the apparatus employed therefor.

Dated 4th February, 1863.

309. G. Harton, North-road, Highgate—Imp. in wood paving.

311. T. E. Tallent, New Church-street, Bermondsey—Imp. in the manufacture of leather, and in machinery for that purpose.

313. G. Haseltine, 12, Southampton-buildings, Chancery-lane—Imp. in the mode of uniting metallic surfaces. (A com.)

315. J. J. Hays, Hitchin—An improved hot air stove where peat charcoal is the fuel employed, and for the method of using peat charcoal or other suitable fuel in connection with the said stove or other stoves for the purpose of purifying or filtering the gaseous products of combustion.

316. L. J. H. Marville, 2, Rue St. Appoline, Paris—A new kind of covering for the ears, made of india-rubber, gutta percha, or other materials.

317. Z. M. Parkes, 2, Upper Park-place, Plumstead-common—An imp. in iron and other metal bond for use in building.

319. B. Russ, Bristol—Imp. in the construction of iron ships or vessels, and of armour applicable thereto.

321. J. A. Manning, Inner Temple—Imp. in the treatment of night soil and other waste products, and for the manufacture of manure therefrom.

322. W. Stokes, Edgbaston, Birmingham—Imp. in the construction of window sashes, whereby the same are rendered more weather proof and secure against draughts and burglars, and permit the outside to be cleaned with the facility of the inside.

Dated 5th February, 1863.

323. W. T. Mabley, Altrincham, Cheshire, and W. T. Cheetham, Ashton-under-Lyne—Imp. in blowing organs and other such musical instruments, parts of which imp. are also applicable to obtaining motive power for other purposes.

325. W. Betts, Wharf-road, City-road—Imp. in apparatus for applying metallic capsules to bottles.

327. E. Ingham, Halifax and Bradford—An improved apparatus for and means of dyeing wool in the sliver, from which "mixture yarns" may be drawn.

328. R. A. Brooman, 166, Fleet-street—Imp. in machinery for supplying and spreading wool and other filamentous materials on belts, tables, and other surfaces, to be afterwards carded and otherwise acted on. (A com.)

329. J. Paterson, Staining-lane—Imp. in buckle and hook fastenings.

330. R. A. Brooman, 166, Fleet-street—Imp. in apparatuses for tuning pianofortes. (A com.)

Dated 6th February, 1863.

331. B. F. Bates, Morley's Hotel, Strand—Imp. in cannon and in projectiles to be used therewith. (Partly a com.)

333. T. Blakeley and B. Meakes, 11, Bread-street-hill, Cannon-street—An improved lead and stone pencil sharpener.

335. G. Stevens, Victoria terrace, Camberwell—Imp. in means or apparatus for effecting a regular supply of air or aeriform fluids for various purposes.

337. R. A. Brooman, 166, Fleet-street—Imp. in carding engines, whereby slivers are formed into threads ready for spinning. (A com.)

339. J. Price, 84, High-street, Southampton—Imp. in signal lanterns suitable for being used in open boats.

341. A. Ellissen, Warwick-road, Maida vale—An improved method of treating sheeting and plates of iron to be used in shipbuilding and marine constructions for protection against marine animals and marine plants.

Dated 7th February, 1863.

343. J. Sirou, Castel Sarrazin, France—A new medical preparation for internal and external application.

345. G. Turner, 13, Rose-terrace, Brompton—Imp. in means or apparatus for mincing or cutting meat or other substances.

349. J. James, 12 and 13, Red Cross-square, Cripplegate—An improved covering for hooped skirts.

351. M. Hackforth, Bentinck street, Manchester-square—Imp. in shades or reflectors for lighting purposes.

353. D. Groucutt, Coseley, Staffordshire—An imp. or imps. in the manufacture of iron for making nails.

Dated 9th February, 1863.

357. D. Law and J. Downie, Glasgow—Imp. in traction engines or common road locomotives.

359. H. Smith and J. Smith, Bury St. Edmunds—Imp. in drills or machines for depositing seed and manure.

Dated 10th February, 1863.

361. J. Crosby, Audenshaw, and J. B. Smith, Bury, Lancashire—Imp. in carding engines for carding and drawing flax tow, in part applicable to carding cotton or other fibrous substances.

363. R. Burley, Glasgow—Imp. in handles for hammers, mallets, picks, mattocks, and similar tools.

365. M. Cartwright, Hoxton—Imp. in combining plastic substances with metals.

367. W. Whitaker and W. Tongue, Bradford—Imp. in apparatus and processes for steeping, boiling, *washing*, *bleaching*, and dyeing fibrous materials or slivers, slubbings, rovings, yarns, or woven fabrics of the same.

Dated 11th February, 1863.

371. J. Duckworth, Pilkington, near Manchester—Imp. in the manufacture of paper.

375. W. Symington, Glasgow—Imp. in weaving and in apparatus therefor.

377. E. Humphrys, Deptford, Kent—Imp. in apparatus for steering ships.

INVENTION WITH COMPLETE SPECIFICATION FILED.

414. M. Ohren, Sydenham—Imp. in the construction of gas holders, and in the mode of rendering gas holders self-acting.—16th February, 1863.

PATENTS SEALED.

[*From Gazette, February 20th*, 1863.]

February 20th.

2362. H. P. Hughes.
2364. J. Harrison & B. Harrison.
2370. A. Crichton.
2374. R. Sims.
2384. J. J. Potter.
2389. J. J. Moeckel.
2400. G. W. Dyson.
2402. P. W. Mackenzie and S. W. Smith.
2406. E. T. Hughes.
2407. E. C. Harding and C. Doody.
2414. J. Walker.
2428. R. Glanville.
2468. C. W. Williams.
2537. J. Whines.
2580. H. R. Fanshawe.
2910. A. Krupp.

[*From Gazette, February 24th*, 1863.]

February 24th.

2379. R. A. Brooman.
2381. J. G. Nutting.
2390. E. Lachenal.
2391. W. Husband.
2401. W. Owen.
2408. F. LeConte.
2411. J. Meyer.
2416. J. Ellis.
2417. J. Whitehead.
2418. E. G. Fitton.
2419. J. Watt and T. S. Haviside.
2447. J. Platt & W. Richardson.
2449. R. P. Coles.
2471. J. Whitehead.
2522. H. J. Lewis.
2529. E. G. Chant.
2637. J. Brown.
2650. W. Carrick & W. Carrick, jun.
2702. C. Chinnock.
2775. J. H. Johnson.
2836. G. T. Bousfield.
3934. A. Guild.
2979. J. H. Johnson.
3002. T. Brown.
3052. A. Graemiger.
3061. E. S. Ritchie.
3100. N. Thompson.
3203. T. Evans.
3209. J. Anderson.
228. W. E. Newton.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[*From Gazette, February 24th*, 1863.]

February 16th.

435. A. Belpaire.
440. H. D. P. Cunningham.

February 17th.

508. J. H. Johnson.
587. J. Eccles.

February 18th.

475. C. Schiele.
723. J. Aspell, E. Booth, and J. Hurst.
755. C. Ashworth.

February 19th.

465. Sir C. T. Bright.
485. P. A. J. Dujardin.
527. T. Silver and J. Hamilton.
564. R. H. Collyer.

February 20th.

522. G. Jenkins.
562. W. E. Newton.
605. J. Howard.
624. A. Paget.
664. W. E. Newton.

February 21st.

494. J. Pegg.
499. E. Mucklow.
593. W. H. Muntz.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[*From Gazette, February 24th*, 1863.]

February 17th.

452. J. S. C. Heywood and G. Lloyd.

February 18th.

420. W. G. Merrett.
460. E. Schischkar.

February 19th.

431. J. Freer.

February 20th.

470. H. Loveridge.
505. T. T. Jopling.